

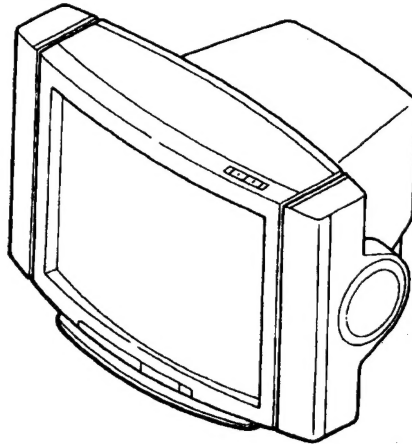
# KV-L34SN11

RM-845P

## SERVICE MANUAL

*Australian Model*

*Chassis No. SCC-G71C-A*



## G3F CHASSIS

MODELS OF THE SAME SERIES	
KV-L34SN11	KV-K25MF2/K29MF2
KV-L34MF1/L34MH11 KV-L34MN11	KV-K29MF1

TRINITRON® COLOR TV  
**SONY®**



# **SPECIFICATIONS**


		Note
<b>Power requirements</b>	110-240 V AC, 50/60 Hz	
<b>Power consumption (W)</b>	174	
<b>Television system</b>	B/G, I, D/K, M	
<b>Color system</b>	PAL, PAL 60, SECAM, NTSC4.43, NTSC3.58	
<b>Stereo system</b>	NICAM Stereo B/G, I; A2 Stereo (German) B/G	
<b>Channel coverage</b>		
<b>B/G</b>	VHF: E2 to E12 / UHF: E21 to E69 / CATV: S01 to S03, S1 to S41 VHF: 0 to 5, 5A 6 to 12 / UHF: 28 to 69 VHF: 1 to 10	
<b>I</b>	UHF: B21 to B68 / CATV: S01 to S03, S1 to S41	
<b>D/K</b>	VHF: R1 to R12 / UHF: R21 to R60 / CATV: S01 to S03, S1 to S41	
<b>M</b>	VHF: A2 to A13 / UHF: A14 to A79 / CATV: A-8 to E, G to W+25, W+27 to W+84	
<b>Antenna</b>	75-ohm external antenna terminal for VHF/UHF	
<b>Audio output (speaker)</b>	13W × 2	
<b>Number of terminal</b>		
<b>Video</b>	Input: 3    Output: 1	
<b>Audio</b>	Input: 3    Output: 1	
<b>S1-Video</b>	Input: 2	Y: 1 Vp-p, 75 ohms, unbalanced, sync negative C: 0.286 Vp-p, 75 ohms
<b>External speaker</b>	Output: 1	
<b>Picture tube</b>	Hi Black Trinitron	
<b>Tube size (inch)</b>	34	Measured diagonally
<b>Screen size (cm)</b>	80	Measured diagonally
<b>Dimensions (w/h/d, mm)</b>	781.0 × 664.5 × 607.8 1000.6 × 664.5 × 607.8 (including speakers)	
<b>Mass (kg)</b>	70.1 77.5 (including speakers)	
<b>Accessories</b>		
<b>Supplied</b>	Remote commander (1) Size R6 (AA) battery (1)	
<b>Optional</b>	TV stand SU-L34	

Design and specifications are subject to change without notice.

## **CAUTION**

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

## **SAFETY-RELATED COMPONENT WARNING!!**

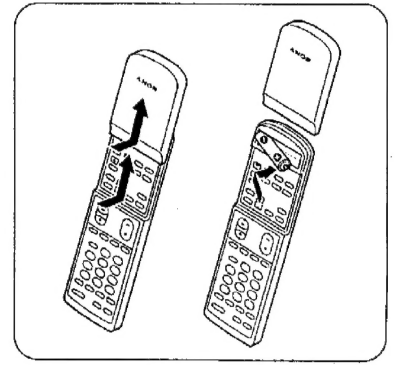
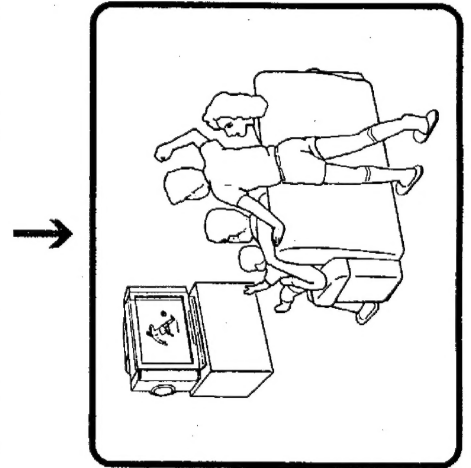
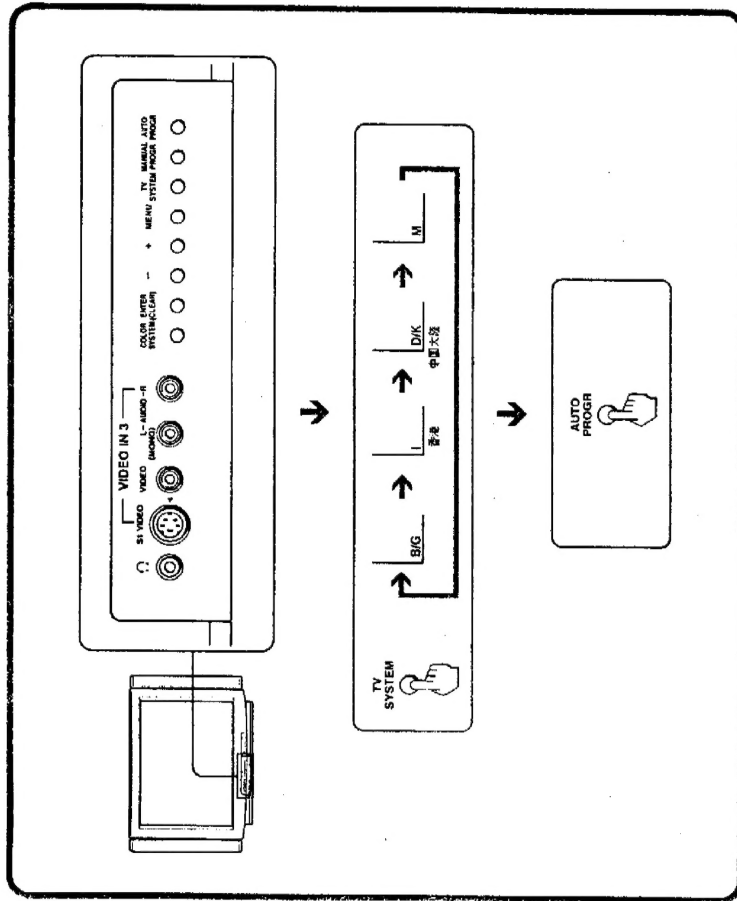
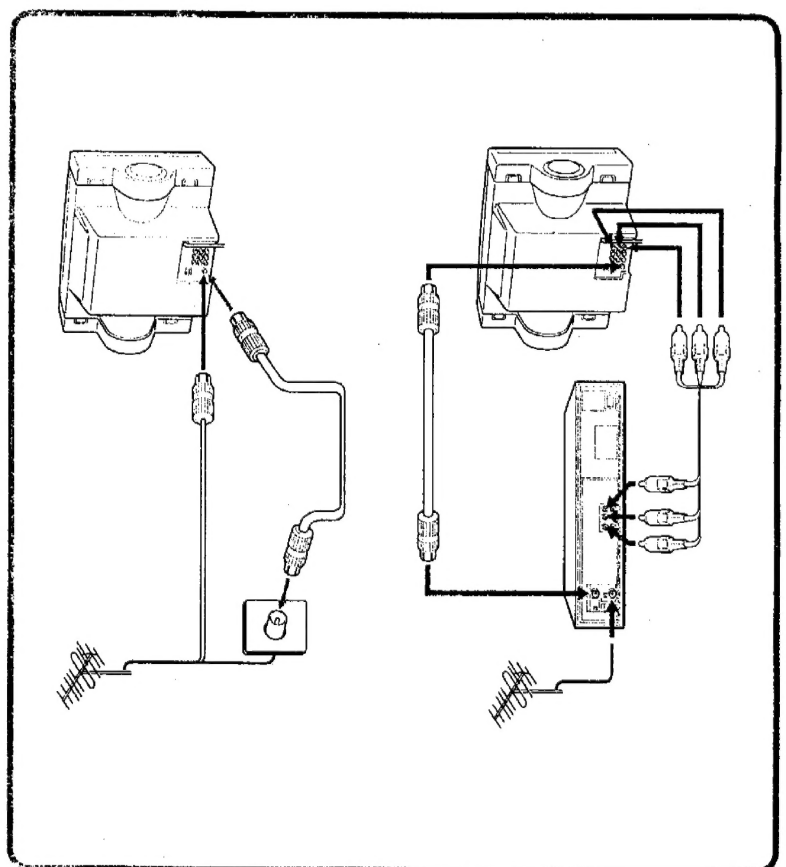
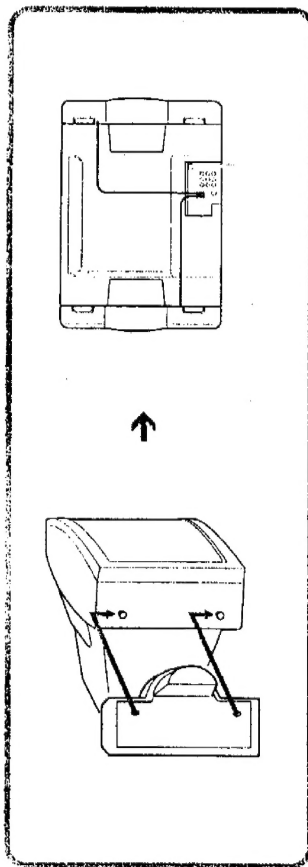
COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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## SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.



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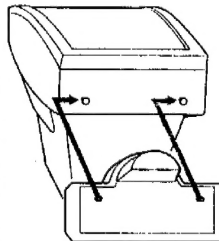
2



## Connections

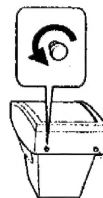
### Connecting the speakers

- 1 Attach the right and left speakers to the TV.



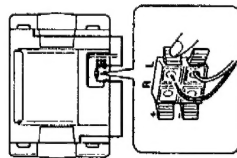
#### Detaching the screws from the TV

When connecting other speakers, you can detach the screws from sides of the TV.



- 2 Connect the speaker wires to the EXT SP (8Ω) terminals at the rear of the TV.

The red wire should be connected to the ⊕ red terminals and the black wire to the ⊖ black terminals.

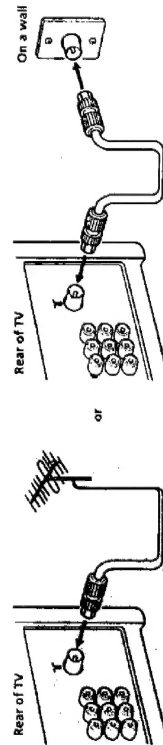


#### Notes

- If you connect larger speakers, they must be rated at 8-ohm impedance with normal power handling capacity of more than 15 W.
- Make sure that none of the speaker wire strands stick out, making contact with the neighbouring speaker terminals, to prevent a malfunction caused by a short circuit of the speaker terminals.
- Unplug the unit from the wall outlet when connecting the speakers.

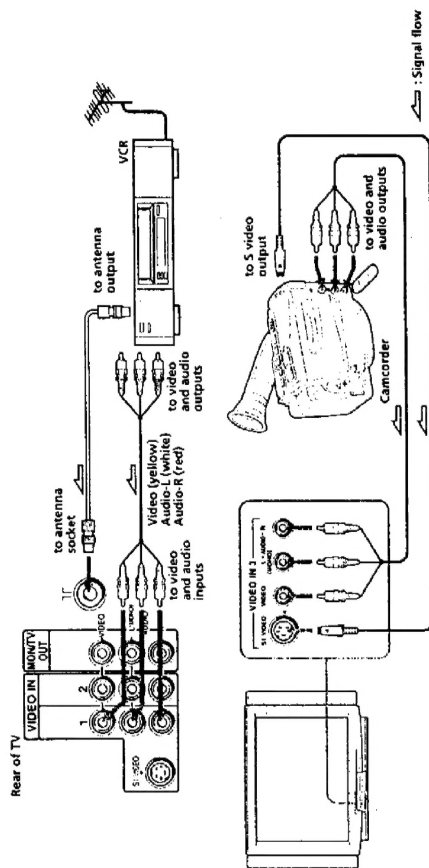
### Connecting a VHF antenna or a combination VHF/UHF antenna — 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable. Plug the connector into the T (antenna) socket at the rear of the TV.



### Connecting optional equipment

You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder, headphones, or stereo system.



#### When connecting a monaural VCR

Connect the yellow plug to VIDEO and the black plug to AUDIO-L (mono).

#### When both S1-Video and video signals are input

The S1-Video input signal is selected. To view a video signal, disconnect the S1-Video connection.

#### Note on the S1-Video signal

When inputting the S1-Video signal through the VIDEO IN 1 or VIDEO IN 3 jack, turn wide mode off if you do not want to display the picture in wide mode (see page 19).

#### Note on the video input

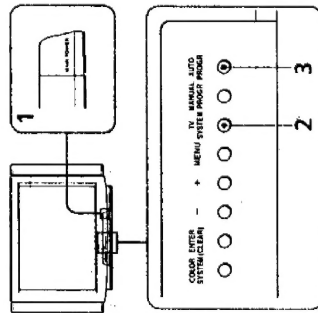
When no signal is input, the screen becomes blue.

## Presetting channels

You can preset TV channels easily by storing all the receivable channels automatically. You can also preset channels manually or disable program positions.

### Presetting channels automatically

You can preset up to 100 TV channels in numerical sequence from program position 1.

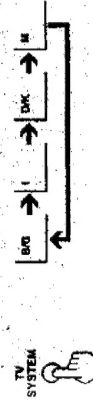


#### 1 Press MAIN POWER.



When the TV is in standby mode after pressing MAIN POWER, press POWER on the TV or remote commander.

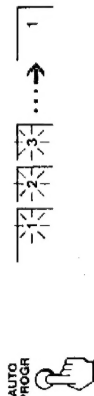
#### 2 Press TV SYSTEM to select your local TV system.



#### Note

- The setting of the TV SYSTEM is memorized for each program position.

#### 3 Press AUTO PROGR.



To start presetting channels automatically from the specified program position

- Press MANUAL PROGR.
- Press TV SYSTEM to select your local TV system.
- Press PROGR +/- to select the program position.
- Press AUTO PROGR.

### Presetting channels manually

To change the program position for a channel or to receive a channel with a weak signal, preset the channel manually.

#### 1 Press MANUAL PROGR.

#### 2 Press PROGR +/- until the required program position appears on the screen.

#### 3 Press TV SYSTEM to select your TV system.

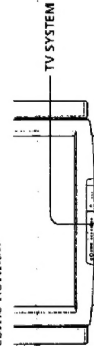
#### 4 Press + or - until the required channel picture appears on the screen.

#### 5 Press MANUAL PROGR.

#### If the TV system is not properly selected

The color of the picture may be poor and/or the sound may be noisy. In this case, select the appropriate TV system.

- Press PROGR +/- to select the program position.
- Press TV SYSTEM until the picture and sound become normal.



### Disabling program positions

By disabling unused or unwanted program positions, you can skip those position when you press PROGR +/-.

#### 1 Press PROGR +/- until the unused or unwanted program position appears on the screen.

#### 2 Press MANUAL PROGR.

#### 3 Press ENTER (CLEAR) on the TV.

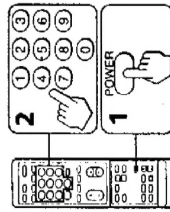
#### 4 Press MANUAL PROGR.

#### To cancel the skip setting

Preset the channel manually or automatically again.

## Setting the remote command mode

You can use the supplied remote commander to operate this TV and Sony video equipment, such as a VCR or multi disc player. To operate Sony video equipment, first set the remote command mode for the video equipment you want to use.

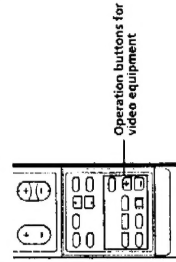


#### 1 Press and hold the POWER button.

#### 2 Press the number buttons that correspond to the remote command mode.

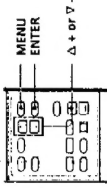
Mode Number buttons	Remote command mode
0 then 1	VTR1 (e.g. Beta format VCR)
0 then 2	VTR2 (e.g. 8 mm format VCR)
0 then 3	VTR3 (e.g. VHS format VCR)
0 then 4	MDP (multi disc player)

After setting the remote command mode, you can use the following buttons to operate the video equipment.



# Changing the menu language

If you prefer Chinese to English, you can change the menu language. You can use buttons on both the remote commander and the TV.



## Cancelling the menu screen

**Press MENU.**

**Notes**

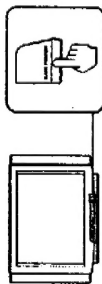
- If more than 60 seconds elapse after you press a button, the menu screen disappears automatically.
- You can display all of the features available for the TV in DEMO mode.

**Getting back to the English menu**



## Watching the TV

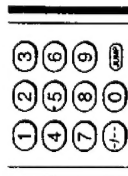
### 1 Press MAIN POWER to turn the TV on.



When the TV is in standby mode after pressing MAIN POWER, press POWER on the TV or remote commander.

### 2 Select the TV channel you want to watch.

To select a channel directly  
Press a number button.



To select a two-digit channel, press "1" before the number buttons.  
For example: to select channel 25, press "1", "2", and "5."



To scan through channels

Press PROG +/- until the channel you want appears.

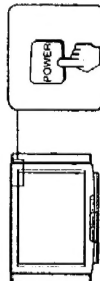
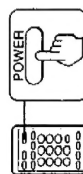


### 3 Press VOL +/- to adjust the volume.

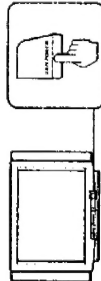


## Switching off the TV

To switch off the TV temporarily, press POWER.

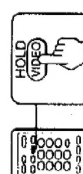


To switch off the TV completely, press MAIN POWER.  
If the main power is turned off in standby mode, the STANDBY indicator may remain alight for a while.

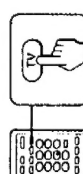


## Watching the video input

Press VIDEO/HOLD.

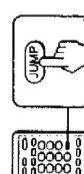


To watch TV, press TV.



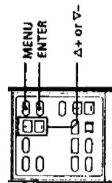
## Switching back quickly to the previous channel

Press JUMP.



## Adjusting the picture

### 1 Press MENU.



VIDEO CONTROL  
AUDIO CONTROL  
SET UP  
LANGUAGE  
DEMO

### 2 Press Delta+ or Delta- to move the cursor (P) to VIDEO CONTROL.



VIDEO CONTROL  
AUDIO CONTROL  
SET UP  
LANGUAGE  
DEMO

### 3 Press ENTER.



VIDEO CONTROL  
DYNAMIC  
MIDDLE  
SOFT  
PERSONAL  
ADJUSTMENT

### 4 Press Delta+ or Delta- to select the setting, and press ENTER.

Select	To
DYNAMIC	Display more contrast picture
MIDDLE	Display normal contrast picture
SOFT	Display picture suitable for movies and video games
PERSONAL	Display the picture that is adjusted using ADJUSTMENT
ADJUSTMENT	Make specific adjustments. See "Adjusting the picture setting."

### 5 Press MENU to return to the normal screen.



## Adjusting the picture setting (ADJUSTMENT)

You can adjust the picture to your own taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

- 1 Press MENU.
- 2 Press  $\Delta$ + or  $\nabla$ - to move the cursor ( $\blacktriangleright$ ) to VIDEO CONTROL, and press ENTER.
- 3 Press  $\Delta$ + or  $\nabla$ - to move the cursor ( $\blacktriangleright$ ) to ADJUSTMENT, and press ENTER.
- 4 Press  $\Delta$ + or  $\nabla$ - to move the cursor ( $\blacktriangleright$ ) to the item you want to adjust, and press ENTER.

PERSONAL ADJUSTMENT	
PICTURE	■■■■■■■■■■ 100
COLOR	■■■■■■■■■■ 50
BRIGHT	■■■■■■■■■■ 50
HUE	■■■■■■■■■■ 50
SHARP	■■■■■■■■■■ 70

- 5 Press  $\Delta$ + or  $\nabla$ - to adjust the item, and press ENTER.

Item	Press $\Delta$ + to	Press $\nabla$ - to
PICTURE	Increase picture contrast	Decrease picture contrast
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
HUE	Make skin tones become greenish	Make skin tones become reddish
SHARP	Sharpen the picture	Soften the picture

- 6 To adjust other items, repeat steps 4 and 5.

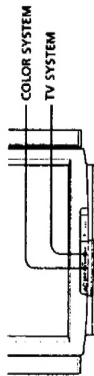
- 7 Press MENU to return to the normal screen.

### Note

- You can adjust HUE for NTSC color system only.

### If the color of the picture is abnormal

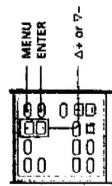
When receiving programs through the "I" terminal: Press TV SYSTEM or COLOR SYSTEM until the color becomes normal.



### Note

- Normally set COLOR SYSTEM to AUTO.

## Adjusting the sound



- 1 Press MENU.



VIDEO CONTROL	
VIDEO CONTROL	■■■■■■■■■■
SET UP	■■■■■■■■■■
LANGUAGE	■■■■■■■■■■
DEMO	■■■■■■■■■■

- 2 Press  $\Delta$ + or  $\nabla$ - to move the cursor ( $\blacktriangleright$ ) to AUDIO CONTROL.



VIDEO CONTROL	
VIDEO CONTROL	■■■■■■■■■■
SET UP	■■■■■■■■■■
LANGUAGE	■■■■■■■■■■
DEMO	■■■■■■■■■■

- 3 Press ENTER.



AUDIO CONTROL	
AUDIO CONTROL	■■■■■■■■■■
NEWS	■■■■■■■■■■
STANDARD	■■■■■■■■■■
PERSONAL ADJUSTMENT	■■■■■■■■■■

- 4 Press  $\Delta$ + or  $\nabla$ - to select the sound that you want, and press ENTER.

Select	To
MUSIC	Listen to music programs.
NEWS	Listen to news program. A person's voice can be heard clearly.
STANDARD	Listen to sound other than music or news.
PERSONAL	Listen to the sound that is adjusted using ADJUSTMENT.
ADJUSTMENT	Make specific settings. See "Adjusting the sound setting."

- 5 Press MENU to return to the normal screen.

## Adjusting the sound setting (ADJUSTMENT)

You can adjust the sound to your own taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

- 1 Press MENU.
- 2 Press  $\Delta$ + or  $\nabla$ - to move the cursor ( $\blacktriangleright$ ) to AUDIO CONTROL, and press ENTER.
- 3 Press  $\Delta$ + or  $\nabla$ - to move the cursor ( $\blacktriangleright$ ) to ADJUSTMENT, and press ENTER.
- 4 Press  $\Delta$ + or  $\nabla$ - to move the cursor ( $\blacktriangleright$ ) to the item you want to adjust, and press ENTER.

PERSONAL ADJUSTMENT	
BASS	■■■■■■■■■■ 80
TREBLE	■■■■■■■■■■ 80
BALANCE	■■■■■■■■■■ 0

- 5 Press  $\Delta$ + or  $\nabla$ - to adjust the item, and press ENTER.

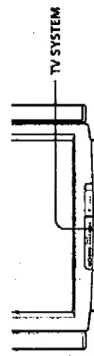
Item	Press $\Delta$ + to	Press $\nabla$ - to
BASS	Increase the bass sound	Decrease the bass sound
TREBLE	Increase the treble sound	Decrease the treble sound
BALANCE	Increase the volume of right speaker	Increase the volume of left speaker

- 6 To adjust other items, repeat steps 4 and 5.

- 7 Press MENU to return to the normal screen.

### If the sound is distorted or noisy

When receiving programs through the "I" terminal: Press TV SYSTEM until the sound becomes clear.

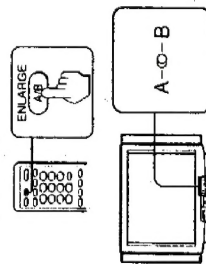


## Selecting a stereo or bilingual program

You can enjoy stereo sound or bilingual program of NICAM and A2 (German) systems. The initial setting is stereo sound.

**Press AB/ENLARGE repeatedly until you receive the sound you want.**

The sound changes and the corresponding indicator lights up as follows:



When receiving a NICAM program:

Broadcasting	On-screen display	Selected sound (indicator)
NICAM stereo	NICAM	Stereo → Regular (A and B)
NICAM bilingual	NICAM	→ A → B → Regular (A) (B)
NICAM monaural	NICAM	→ Monaural → Regular (A)

When receiving a A2 (German) program:

Broadcasting	On-screen display	Selected sound (indicator)
A2 (German) stereo	STEREO	Stereo (A and B)
A2 (German) bilingual	—	→ A → B → A+B (A) (B) (A and B)

### Receiving area for NICAM and A2 (German) programs

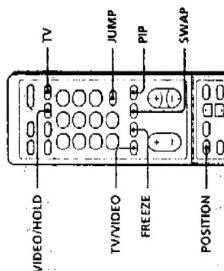
System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, etc.
A2 (German)	Australia, Malaysia, Thailand, etc.

#### Notes

- If the signal is very weak, the sound becomes monaural.
- If the stereo sound is noisy, select "regular" or "mono." The sound becomes monaural, however, the noise will be reduced.

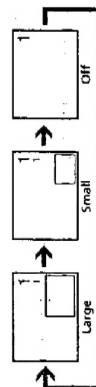
## Watching two pictures simultaneously

With this function you can display a Picture In Picture (PIP) screen (small picture) within the main picture of a TV program or a video input.



### Displaying PIP

Press PIP.



The channels are displayed as follows:

Main screen: green

PIP screen: white

### Selecting a TV program or video in the main screen

To select a TV program, press TV and select the channel.

To select a video, press VIDEO/HOLD to select a video input.

### Selecting a TV program or video in the PIP screen

To select a TV program, press TV/VIDEO to select TV then select the channel.

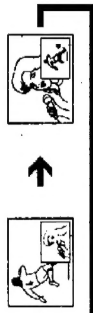
To select a video, press TV/VIDEO to select a video input.

#### Note

- To enjoy two different TV programs simultaneously, you need another equipment with built-in tuner (e.g., VCR with tuner, satellite tuner, etc.).

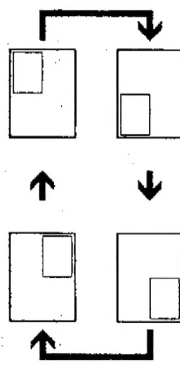
### Swapping pictures between the main and PIP screens

Press SWAP.



### Changing the position of the PIP screen

Press POSITION.



### Freezing the PIP screen

Press FREEZE.

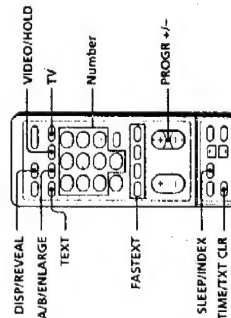
To restore the normal picture, press FREEZE again.

#### Notes

- When you display a VCR picture on the PIP screen at a speed other than normal speed, the picture may be noisy depending on the VCR. The picture can be improved by selecting the smaller size of the PIP screen.
- If you display different color systems (PAL, PAL 60, SECAM, NTSC) on the main screen and the PIP screen, the size of the PIP screen may be different and the PIP picture may be noisy. This is not caused by the malfunction of the TV.

## Viewing Teletext

TV stations broadcast an information service called Teletext via a TV channel. Teletext service allows you to receive various information such as weather forecasts or news at any time you want.



### Displaying Teletext

**1** Select a TV channel which carries the Teletext broadcast you want to watch.

**2** Press **TEXT** to display the Teletext.

A Teletext page is displayed (normally the index page). If there is no Teletext broadcast, P100 is displayed at the top left corner of the screen.

To cancel the Teletext display, press **TV**.

### Superimposing a Teletext page on the TV picture

Press **TEXT**.

Each time you press **TEXT**, the screen changes as follows:

Teletext → Teletext and TV → TV

### Checking the contents of a teletext service (INDEX)

Press **SLEEP/INDEX** to display an overview of the Teletext contents and page numbers.

### Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT page is broadcast, a color-coded menu appears at the bottom of the screen. The colors of the menu correspond to the RED, GREEN, YELLOW, and CYAN buttons on the remote commander. These color buttons function as the FASTEXT buttons in Teletext mode.

Press the color button which corresponds to the color-coded menu.

The page is displayed after a few seconds.

### Selecting a Teletext page

To input the three-digit page number of the Teletext page, press the number buttons.

If you make a mistake, key in the correct page number again.

To access the next or previous page, press **PROG +/-**.

### Holding a Teletext page

A Teletext page may consist of several subpages. You can stop the page scrolling in order to read the text at your own pace.

Press **VIDEO/HOLD**.

The HOLD symbol "H" is displayed at the top left corner of the screen.

To resume normal Teletext operation, press **TEXT**.

### Revealing concealed information

Sometimes pages contain concealed information, such as an answer to a quiz. The reveal option lets you disclose the information.

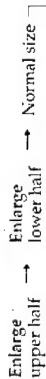
Press **DISP/REVEAL**.

To conceal the information, press **DISP/REVEAL** again.

### Enlarging the Teletext display

Press **A/B/ENLARGE**.

Each time you press **A/B/ENLARGE**, the Teletext display changes as follows:



### Waiting for a Teletext page while watching a TV program (TEXT CLR)

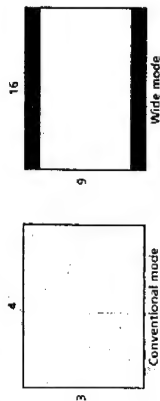
**1** Key in the page number of the Teletext that you want to refer, then press **TIME/TEXT CLR**.

**2** When the page number is displayed on the screen, press **TEXT** to switch the Teletext on.

## Customizing the TV (SET UP)

### Turning wide mode

When receiving the signal conforming to wide mode (SI-Video signal), you can change the size of the picture on the screen.



**1** Press **MENU**.

**2** Press **Δ+** or **▽-** to select **SET UP**, and press **ENTER**.

SET UP OFF  
WIDE: MONITOR  
A/V OUT: OFF  
VIDEO NR: OFF

**3** Press **Δ+** or **▽-** to select **WIDE**, and press **ENTER**.

**4** Press **Δ+** or **▽-** to select the wide mode to suit the size of the picture you want to display on the TV screen.

Select	To
ON	Display the picture on the screen in wide mode
AUTO	Display the picture on the screen in wide mode automatically when receiving the SI-Video signal through the SI-Video input jack
OFF	Display the picture on the screen in conventional size

#### Note

- When the picture is in wide mode, the bright lines which are used for adjusting the CRT at optimum level appear at the top of the screen.

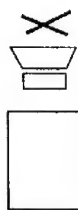
## Troubleshooting

**Good picture  
Noisy sound**



→ Check the TV SYSTEM setting.

**No picture  
No sound**



→ Press MAIN POWER.

→ Check the antenna connection.

→ Check the VCR connections.

**Good picture  
No sound**



→ Press VOLUME +.

→ Press MUTE.

→ Press A/B/ENLARGE.

→ Check the speaker connection.

**No color**



→ Adjust the COLOR level in the VIDEO CONTROL menu's ADJUSTMENT option.  
→ Check the COLOR SYSTEM setting.

**TV cabinet creaks**

→ Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

**Selecting the surround sound**  
You can enjoy a surround sound effect that is like being in a music hall when receiving stereo signals.

**1 Press MENU.**

**2 Press  $\Delta$ + or  $\nabla$ - to select SET UP, and press ENTER.**

SET UP OFF  
WIDE MONITOR  
AV OUT: OFF  
SURROUND: OFF  
VIDEO NR: OFF

**3 Press  $\Delta$ + or  $\nabla$ - to select SURROUND, and press ENTER.**

**4 Press  $\Delta$ + or  $\nabla$ - to turn the surround sound on or off, and press ENTER.**

Select	To
ON	Listen to surround sound that is effective for stereo signals
SPACE	Listen to surround sound that is effective for monaural signals
OFF	Turn off surround sound

### Reducing the noise of the picture

You can reduce the noise level of the picture when the TV receives a weak signal or when you play a videotape that is in poor condition.

**1 Press MENU.**

**2 Press  $\Delta$ + or  $\nabla$ - to select SET UP, and press ENTER.**

SET UP OFF  
WIDE MONITOR  
AV OUT: OFF  
SURROUND: OFF  
VIDEO NR: OFF

**3 Press  $\Delta$ + or  $\nabla$ - to select VIDEO NR, and press ENTER.**

**4 Press  $\Delta$ + or  $\nabla$ - to turn the noise reduction on or off, and press ENTER.**

### Using the AV OUT (advanced rec-out) terminal

You can select the output signal from the MON/TV OUT jacks at the rear of the TV.

**1 Press MENU.**

**2 Press  $\Delta$ + or  $\nabla$ - to select SET UP, and press ENTER.**

SET UP OFF  
WIDE MONITOR  
AV OUT: OFF  
SURROUND: OFF  
VIDEO NR: OFF

**3 Press  $\Delta$ + or  $\nabla$ - to select AV OUT, and press ENTER.**

**4 Press  $\Delta$ + or  $\nabla$ - to select the output signal, and press ENTER.**

Select	To
TV	Output the TV signal.
MONITOR	Output the signal of the picture you are watching as a monitor.

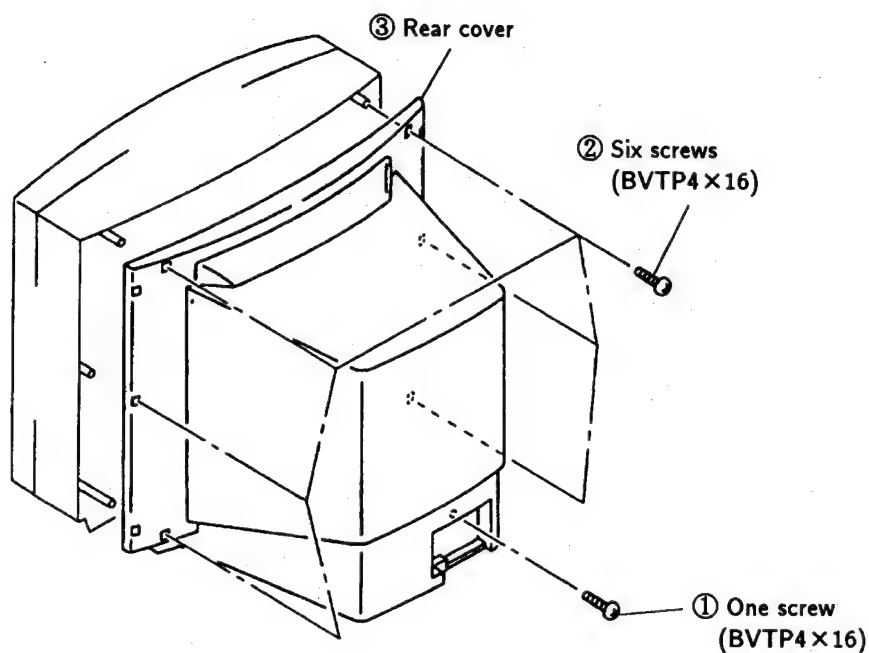
#### Note

- Do not change the channel while recording with a VCR through the MON/TV OUT jacks. If you change the channel, it also changes the channel you are recording.



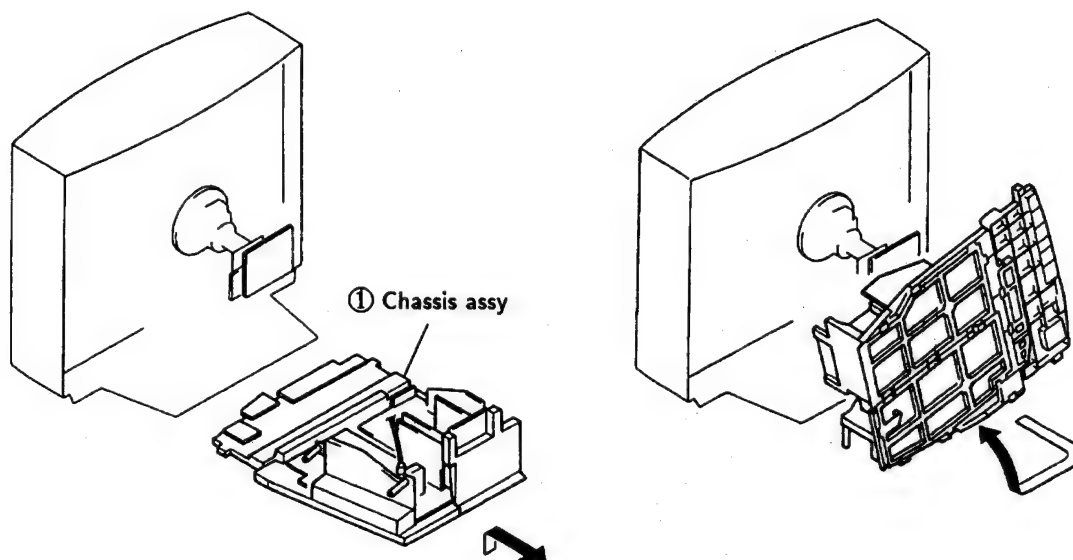
## SECTION 2 DISASSEMBLY

### 2-1. REAR COVER REMOVAL

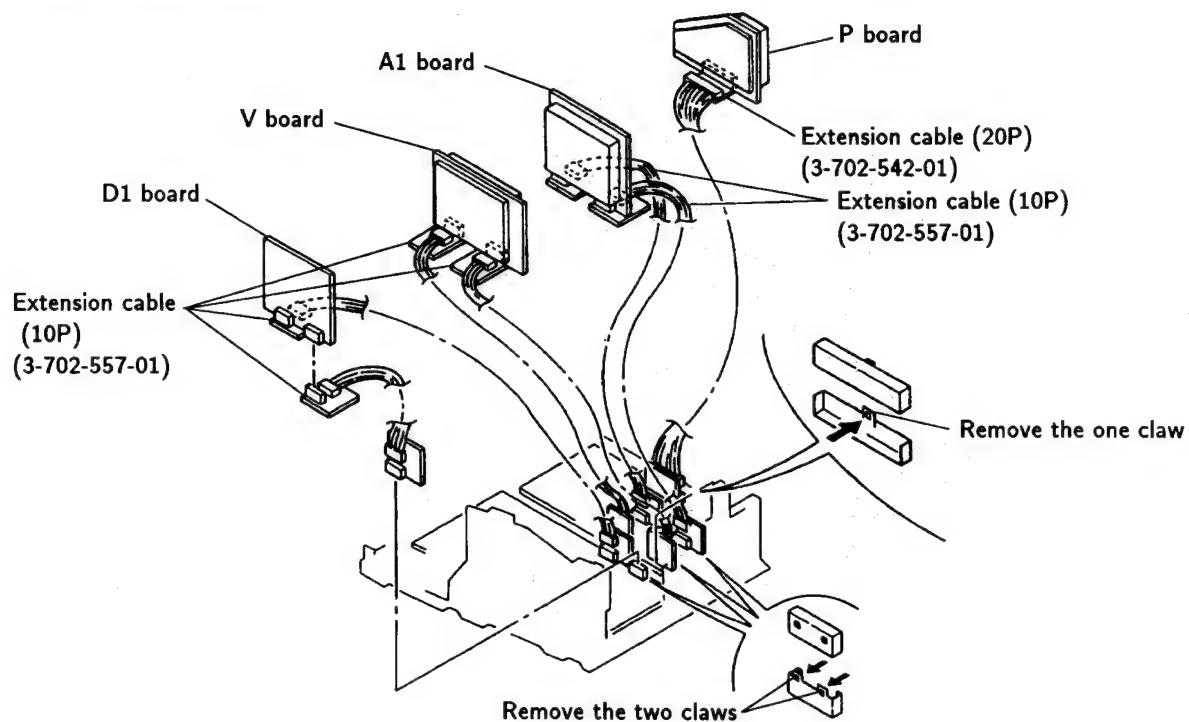


### 2-2. CHASSIS ASSY REMOVAL

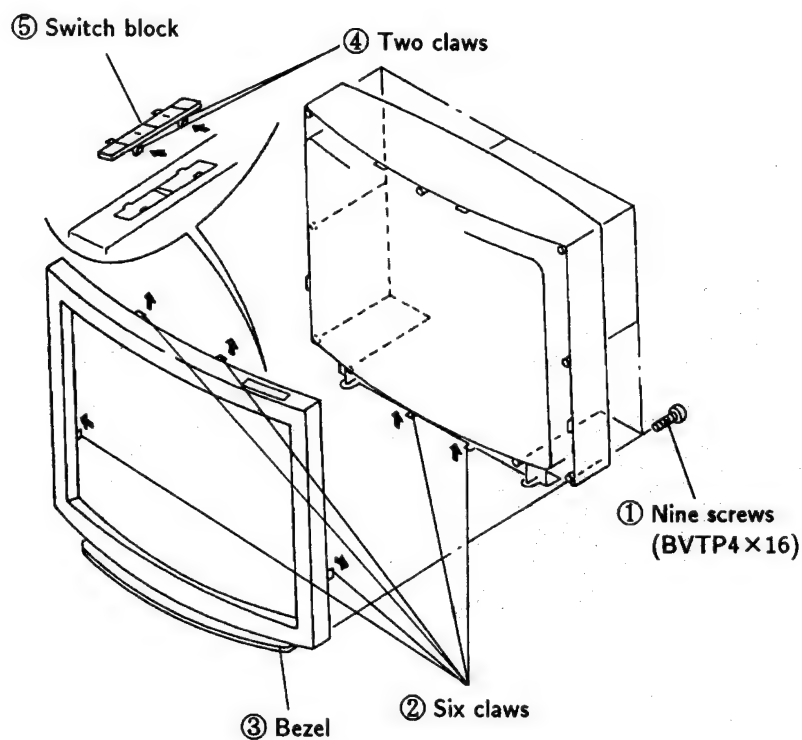
### 2-3. SERVICE POSITION



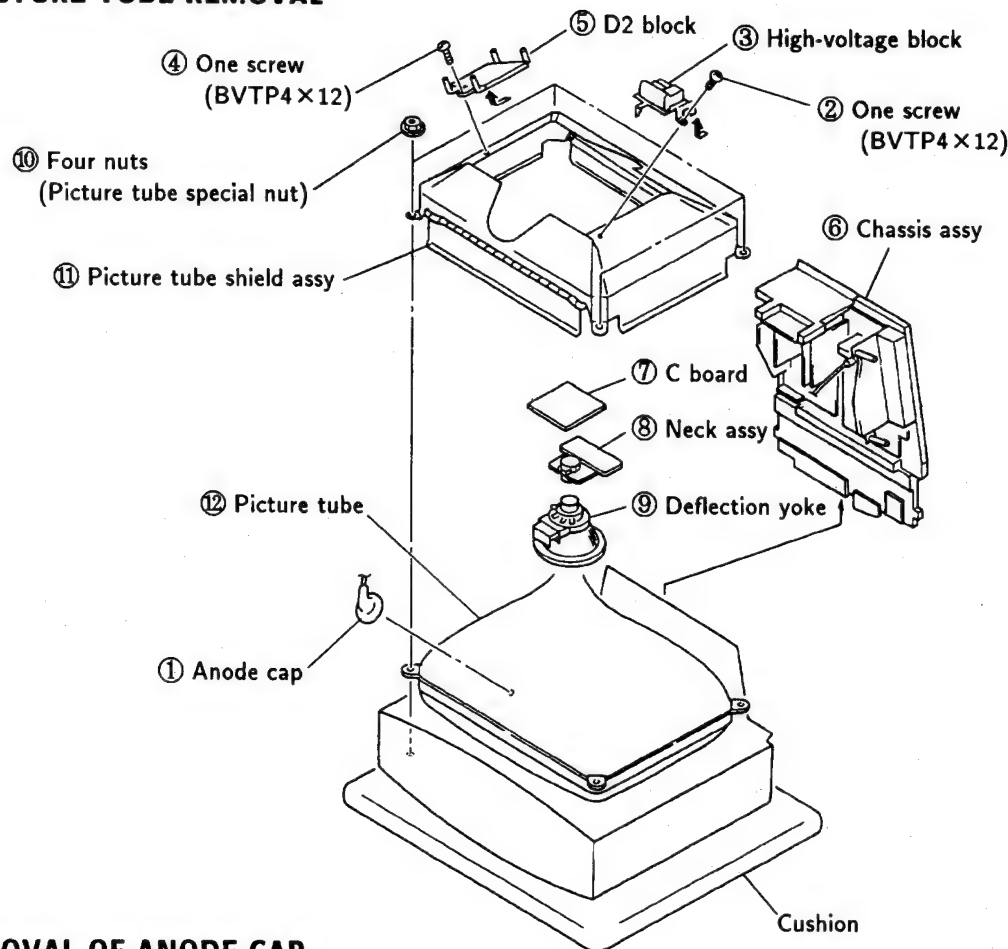
## 2-4. EXTENSION CABLE



## 2-5. SWITCH BLOCK REMOVAL



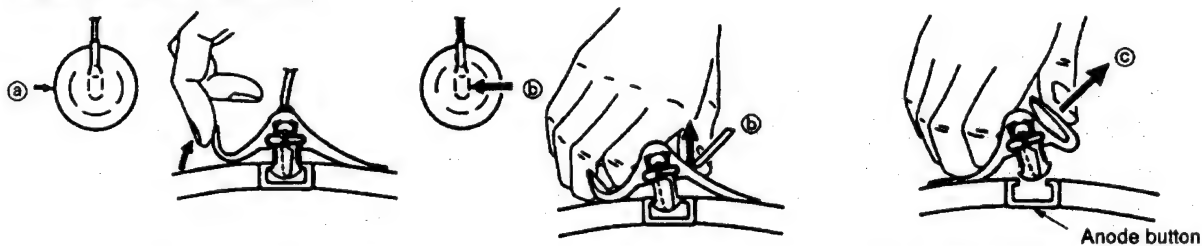
## 2-6. PICTURE TUBE REMOVAL



### • REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

### • REMOVING PROCEDURES



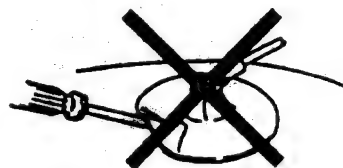
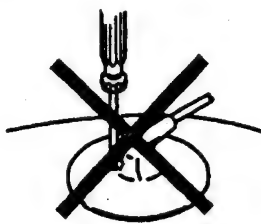
① Turn up one side of the rubber cap in the direction indicated by the arrow ①.

② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ②.

③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ③.

### • HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber too hard in order not to hurt inside of anode-caps! A material fitting called as shatter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hard! The shatter-hook terminal will stick out or hurt the rubber.



## SECTION 3

### SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control ..... RESET

BRIGHTNESS control ..... CENTER

Perform the adjustments in order as follows :

1. Beam Landing
2. Convergence
3. Focus
4. White Balance

**Note :** Test Equipment Required.

1. Color-bar/Pattern Generator
2. Degausser
3. Oscilloscope

#### Preparations:

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

#### 3-1. BEAM LANDING

1. Input the white signal with the pattern generator.

Contrast } normal  
Brightness }

2. Position neck ass'y as shown in Fig 3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.  
(See Figures 3-1 through 3-3.)
5. Move the deflection yoke forward and adjust so that entire screen is red. (See Figure 3-1.)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it.  
(See Figure 3-4.)

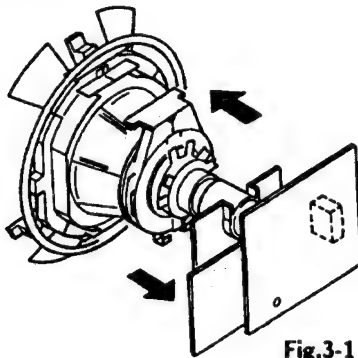


Fig.3-1

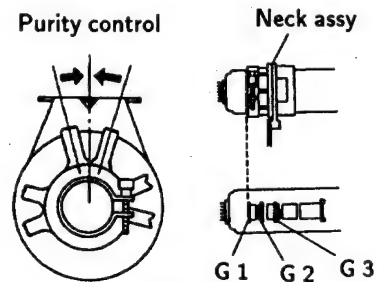


Fig.3-2

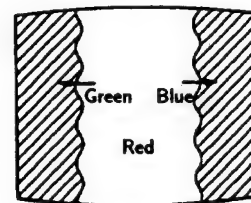


Fig.3-3

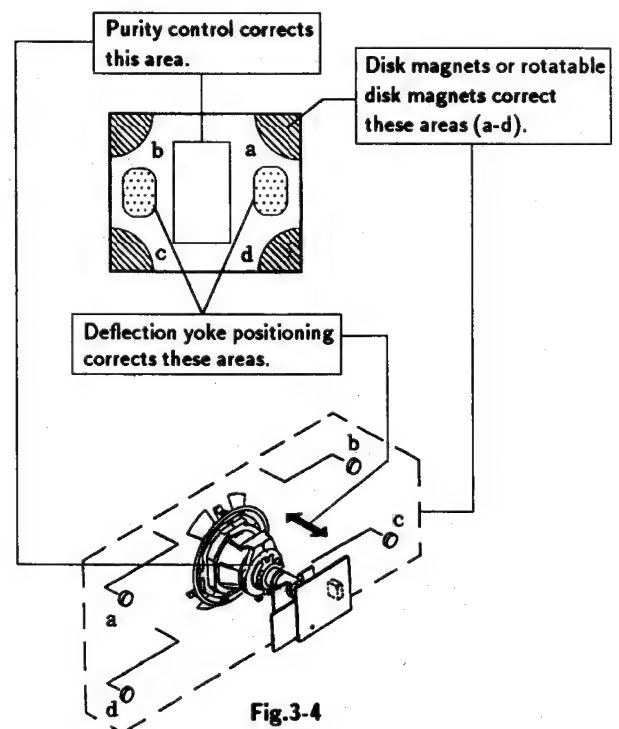


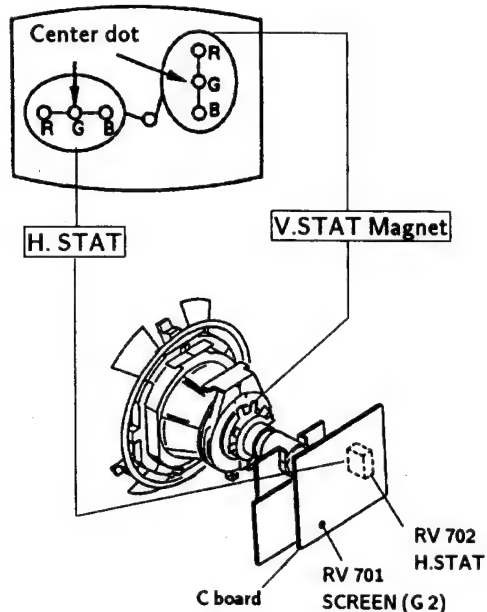
Fig.3-4

### 3-2. CONVERGENCE

#### Preparation :

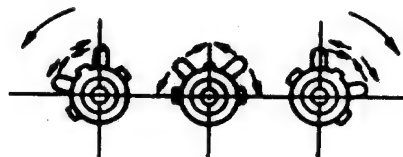
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.

#### (1) Horizontal and Vertical Static Convergence

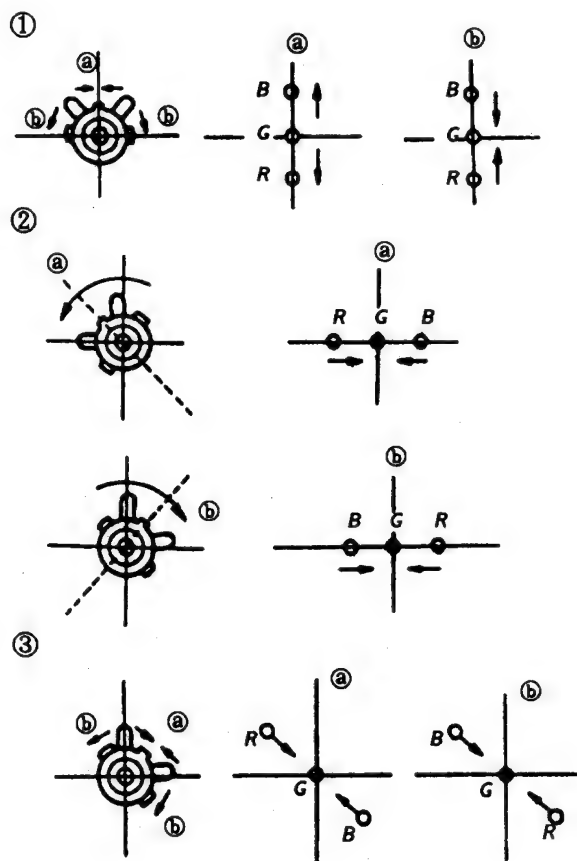


1. (Moving horizontally), adjust the H. STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
2. (Moving vertically), adjust the V. STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
3. If the H. STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H. STAT variable resistor and the V. STAT magnet in the manner given below.  
(In this case, the H. STAT variable resistor and the V. STAT magnet influence each other)

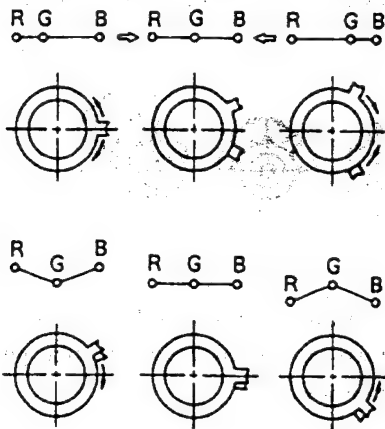
- Tilt the V. STAT magnet and adjust the static convergence by opening or closing the V. STAT magnet.



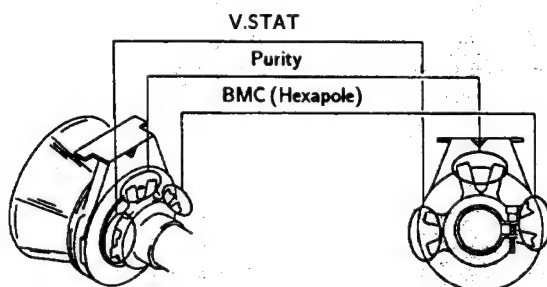
4. If the V. STAT magnet is moved in the direction of the ① and ② arrows, the red, green, and blue points move as shown below.



• Operation of BMC (Hexapole) Magnet



- The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking. Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).



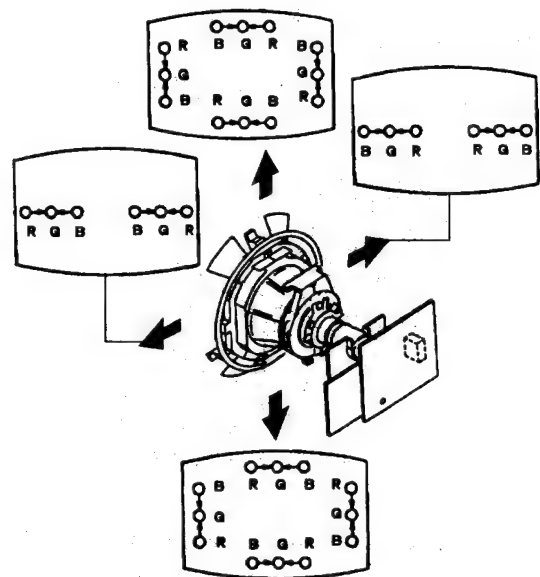
• Y separation axis correction magnet adjustment

1. Receive the cross-hatch signal, and adjust [PIC] to "MIN" and [BRT] to "standard".
2. Adjust the deflection yoke to the upright condition when it hits the CRT.
3. Adjust so that the Y separation axis correction magnet on the neck assembly is symmetrical at the top and bottom (open state).
4. Return the deflection yoke to its original position.

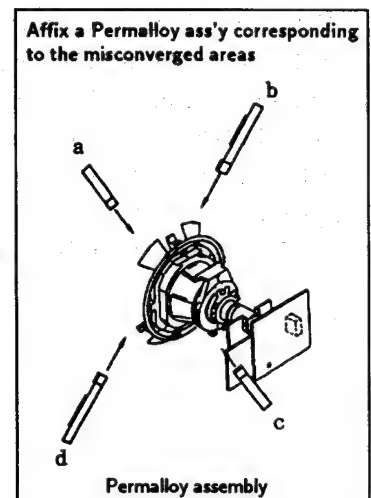
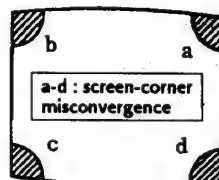
(2) Dynamic Convergence Adjustment

Preparations:

- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.
1. Slightly loosen the deflection yoke screws.
  2. Remove the deflection yoke spacer.
  3. Move the deflection yoke as shown in the figure below and optimize the convergence.
  4. Tighten the deflection yoke screws.
  5. Install the defelection yoke spacer.



(3) Screen-corner Convergence



**(4) Dynamic convergence adjustment**

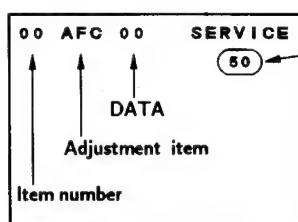
1. Adjust horizontal convergence located at the center position of the screen with H STAT VR.
2. Dynamic convergence adjustments are made with the RM-821 that comes with this unit.

**Entering service mode**

With the unit on standby

↓  
"DISPLAY"  
↓  
"5"  
↓  
"VOL (+)"  
↓  
"POWER"

This operation sequence puts the unit into service mode.

**The screen display is :**

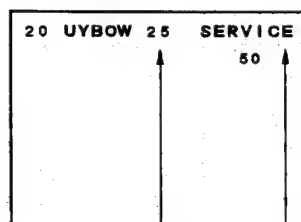
Depends on the signals.  
PAL, SECAM : 50  
NTSC : 60

"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTE"	Writes
"0"	Executes the writing

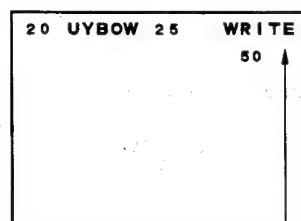
**Item Number 20**

This explanation uses UYBOW as an example.

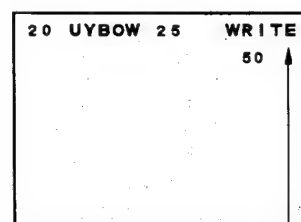
1. Select 20 UYBOW with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum stste.
4. Write with the MUTE button. (The display changes to blue WRITE.)
5. Execute the writing with the "0" button. (The WRITE display changes briefly to red.)



Adjusted with "3"  
and "6" buttons GREEN



GREEN  
Written with "MUTE"



RED  
The WRITE display changes briefly to red, then the display returns to a green SERVICE.

Write excuted with "0"

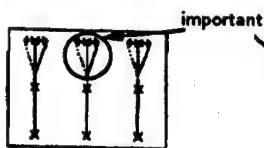
"1", "4"	Select the adjustment item.
↓	
"3", "6"	Raise/lower the data.
↓	
"MUTE"	Writes.
↓	
"0"	Executes the writing.

Item number	Adj. Item	Data range	Standard DATA 50 Hz/60 Hz		Note	Device
			Normal	Wide		
4C	DCS	00~3 F	1 F	1 F	DC Shift	(CXA1526P)
4D	UYB	00~3 F	1 F	1 F	Upper Y Bow	(CXA1526P)
4E	LYB	00~3 F	1 F	1 F	Lower Y Bow	(CXA1526P)
4F	HAP	00~3 F	1 F	1 F	H. Amp	(CXA1526P)
50	HTL	00~3 F	1 F	1 F	H. Tilt	(CXA1526P)
51	UCB	00~3 F	1 F	1 F	Upper Corner Bow	(CXA1526P)
52	UTL	00~3 F	1 F	1 F	Upper Tilt	(CXA1526P)
53	LCB	00~3 F	1 F	1 F	Lower Corner Bow	(CXA1526P)
54	LTL	00~3 F	1 F	1 F	Lower Tilt	(CXA1526P)

**R.G.B.dots movement on the screen of the set**



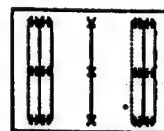
**DC SHIFT**  
Fine adjustment of H.stat



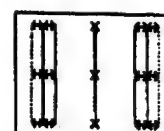
**UPPER Y BOW**  
Adjustment of Y.BOW of the upper section of the screen.



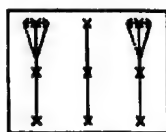
**Standard LOWER Y BOW**  
Adjustment of Y.BOW of the lower section of the screen.



**H.AMP**  
H.AMP adjustment



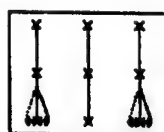
**H.TILT**  
H.TILT adjustment



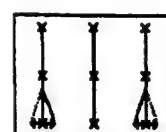
**UPPER COR BOW**  
Adjustment of C.BOW of the upper section of the screen.



**UPPER TILT**  
Adjustment of TILT of the upper section of the screen.



**LOWER COR BOW**  
Adjustment of C.BOW of the lower section of the screen.



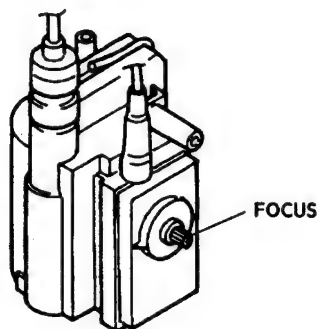
**LOWER TILT**  
Adjustment of TILT of the lower section of the screen.

At this time, H.TILT, H.AMP, UPPER TILT, UPPER COR, BOW, LOWER TILT, and LOWER COR, BOW look like all the same, but the movement of the right and left dots are reverse in all the TILT system. (Pay attention to the dotted lines.)



### 3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.

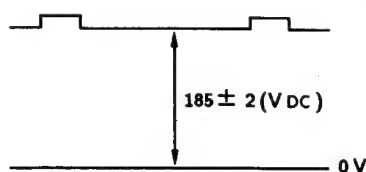


FLYBACK TRANSFORMER (T801)

### 3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

#### (1) G2 (SCREEN) ADJUSTMENT (RV701)

1. Set the PICTURE and BRIGHTNESS to normal.
2. Put to VIDEO input mode without signals.
3. Set to Service Mode.
4. Change BLU data of the item number "58" from "01" to "00". (To turn off Blue Black.)
5. Press **MUTE**, and **0** to write the data in the memory.
6. Connect R, G, and B of the C board cathode to the oscilloscope.
7. Adjust G2 (RV701) voltage to the value below.



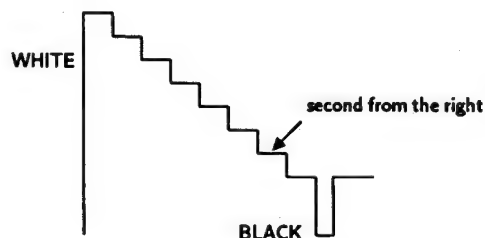
8. Re-set BLU data of the item number "58" from "00" back to "01".
9. Press **MUTE**, and **0** to write the data in the memory.

#### (2) WHITE BALANCE ADJUSTMENTS

1. Set to service mode.
2. Input an entire white signal.
3. Set the PICTURE to minimum.
4. Select SBR (05) with **1** and **4**, and then set the level to minimum with **3** and **6**.
5. Select GCT (09) and BCT (0A) with **1** and **4**. And adjust the level with **3** and **6** for the best white balance.
6. Set the PICTURE to maximum.
7. Select GDR (07) and BDR (08) with **1** and **4** and adjust the level with **3** and **6** for the best white balance.
8. Write into the memory by pressing **MUTE** → then **0**.

#### (3) SUB BRIGHT ADJUSTMENT

1. Set to service mode.
2. Input a staircase signal of black and white from the pattern generator.
3. BRIGHTNESS ... RESET  
PICTURE ..... minimum
4. Select SBR with **1** and **4**, and adjust SBR level with **3** and **6** so that the stripe second from the right is dimly lit.



## **SECTION 4**

### **SELF DIAGNOSIS FUNCTION**

If no acknowledgement is returned from a device which is turned "ON", the device has a problem.  
In this case, one of the LED's responding to the problem device will flicker defined number of times.

Flickering is operated by lighting the LED's for 60ms and turning them off for 600ms.

The flickering frequency responding to each failed device is shown below.

<b>Device</b>	<b>NONVOLATILE MEMORY</b>	<b>AV SWITCH (CXA1545S)</b>	<b>MAIN Y/C (TDA9145)</b>	<b>RGB JUNGLE (CXA1587)</b>	<b>DY DSP (CXD2018)</b>	<b>SURROUND PROCESSOR (TA8776N)</b>
<b>Flickering Frequency</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>

All the devices are checked one after another from the left on the table.

If an error is found, the responding LED will start flickering.

So, if more than 2 devices are failed, the one on the left side will start flickering first.

## SECTION 5

### CIRCUIT ADJUSTMENTS

#### 5-1. ADJUSTMENTS WITH COMMANDER

Service adjustments are made with the RM-845 P that comes with this unit.

##### Entering service mode

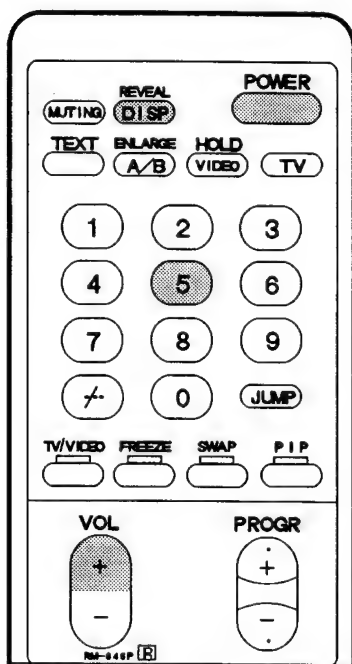
With the unit on standby

↓  
"DISPLAY"  
↓  
"5"  
↓  
"VOL (+)"  
↓  
"POWER"

This operation sequence puts the unit into service mode.

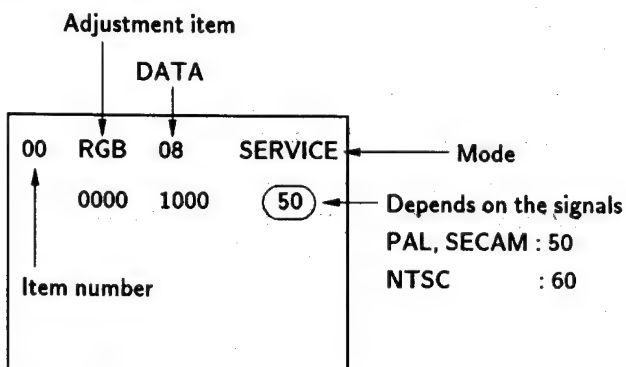
"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTE"	Writes
"0"	Executes the writing

"7", "0"	The data all becomes the values in memory
"8", "0"	User control all goes to the standard state
"9"	H-FRE automatic adjustment
"5", "0"	Service data initialization (Be sure not to use usually.)
"2", "0"	Write 50Hz adjustment data to 60Hz, or vice versa.



RM-845P

The screen display is :



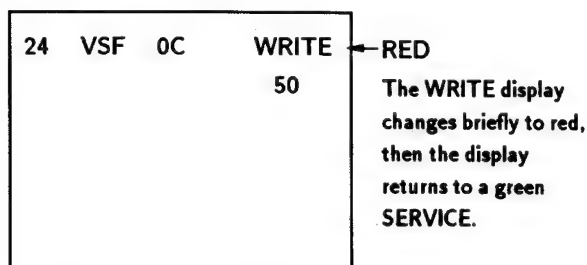
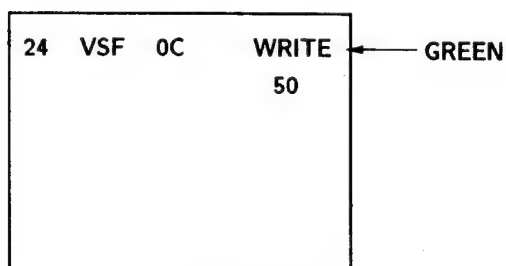
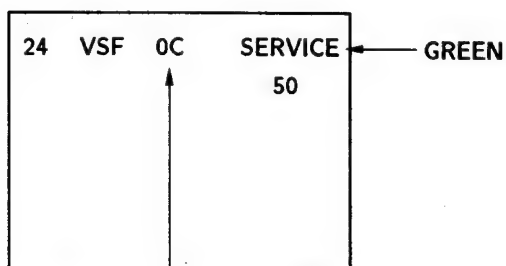
"1", "4"	Select the adjustment item.
↓	
"3", "6"	Raise/lower the data.
↓	
"MUTE"	Writes
↓	
"0"	Executes the writing.

## 5-2. ADJUSTMENT METHOD

### Item Number 24

This explanation uses V-SHFT as an example.

1. Select 24 V-SHFT with the "1" and "4" buttons.
2. Raise/lower the data with the "3" and "6" buttons.
3. Select the optimum state. (The standard is for 0F PAL reception.)
4. Write with the MUTE button. (The display changes to blue WRITE.)
5. Execute the writing with the "0" button. (The WRITE display changes briefly to red.)



Write executed with "0"

Use the same method for Items Number 00-5E. Use "1" and "4" to select the adjustment item, use "3" and "6" to adjust, write with "MUTE", then execute the write with "0".

**Note :** In "WRITE", the data of all items are wrote together to memory.

- H-FRE can be adjusted automatically. Feed a standard signal and input "9", the automatic adjustment is executed.
- As for V-FREQ, by searching the bolded screen V range with adjusting data.

**Note :** In item 02 50Hz, or item 03 60Hz, it operates normally in spite of the 50Hz or the 60Hz of the input signal. Therefore be sure to adjust data according to the input signal.

Item number	Adjustment Item	Data range	Standard DATA				Note	Device
			50 Hz		60 Hz			
			Normal	Wide	Normal	Wide		
00	RGB	00~0F	07	07	07	07	RGB PICTURE	(CXA1587S)
01	SCN	00~0F	08	06	08	06	SUB-Contrast	(CXA1587S)
02	VM	00~03	02	02	02	02	VM Level	(CXA1587S)
03	SCL	00~0F	08	07	08	07	SUB-COLOR	(CXA1587S)
04	SHU	00~0F	08	08	08	08	SUB-HUE	(CXA1587S)
05	SBR	00~3F	1F	1F	1F	1F	SUB-BRIGHTNESS	(CXA1587S)
06	ABL	00~03	03	03	03	03	ABL Mode	(CXA1587S)
07	GDR	00~3F		1F			G Drive	(CXA1587S)
08	BDR	00~3F		1F			B Drive	(CXA1587S)
09	GCT	00~0F		07			G CUT-OFF	(CXA1587S)
0A	BCT	00~0F		07			B CUT-OFF	(CXA1587S)
0B	AKR	00~FF		7F			AKB OFF R CUT-OFF	(CXA1587S)
0C	AKG	00~FF		7F			AKB OFF G CUT-OFF	(CXA1587S)
0D	AKB	00~FF		7F			AKB OFF B CUT-OFF	(CXA1587S)
0E	GMA	00~0F	50 Hz		60 Hz		γ control	(CXA1587S)
0F	DCT	00~03	0C		0C		DC TRAN	(CXA1587S)
10	DPI	00~03	03		03		D-PIC	(CXA1587S)
11	YFI	00~3F	22		22		Y Filter Adjust	(CXA1587S)
12	SHL	00~01	01		01		SHP-LIM	(CXA1587S)
13	YDL	00~0F	07		07		Y Delay Time	(CXA1587S)
14	YSW	00~03	01		01		Y-SW OUT	(CXA1587S)
15	HSH	00~3F	23		2A		H Shift	(CXA1587S)
16	POV	00~0F	5 T	5 V	6 T	6 V	Pre-Over	(CXA1587S)
17	SHF	00~03	08	08	08	08	SHP-F 0	(CXA1587S)
18	SSH	00~03	02	02	02	02	SUB-Sharpness	(CXA1587S)
			01	02	02	03		
19	RMT	00~01		00			R-Mute	(CXA1587S)
1A	GMT	00~01		00			G-Mute	(CXA1587S)
1B	BMT	00~01		00			B-Mute	(CXA1587S)
1C	AG 1	00~01		00			Aging 1 (White)	(CXA1587S)
1D	AKF	00~01		00			AKB-OFF	(CXA1587S)
1E	SMD	00~01	TV		Video		Scan Mode	(CXA1587S)
1F	VEX	00~01	00		00		V-Extension	(CXA1587S)
20	AFC	00~03	03		03		AFC Loop Gain	(CXA1587S)
21	AFF	00~01	00		00		AFC-OFF	(CXA1587S)
22	RFP	00~01	00		00		Reference Position	(CXA1587S)
23	VSZ	00~3F	1E	1E	1A	1A	V-Size	(CXD2018Q)
24	VSF	00~3F	2E	2E	32	32	V-Shift	(CXD2018Q)
25	SCR	00~F	08	08	08	08	S-Correction	(CXD2018Q)
26	VLN	00~F	08	08	08	08	V-Linearity	(CXD2018Q)
27	HSZ	00~3F	0C	0C	0E	0E	H-Size	(CXD2018Q)
28	PAP	00~3F	2E	2E	2E	2E	Pin-Amp	(CXD2018Q)
29	TLT	00~0F	09	09	09	09	Tilt	(CXD2018Q)
2A	UCP	00~0F	0A	0A	0A	0A	Upper Corner Pin	(CXD2018Q)
2B	LCP	00~0F	0C	0C	0C	0C	Lower Corner Pin	(CXD2018Q)
2C	VBW	00~0F	08	08	08	08	V-Bow	(CXD2018Q)
2D	VAG	00~0F	08	08	08	08	V-Angle	(CXD2018Q)
2E	HVV	00~07	04	04	04	04	HV-Comp-V	(CXD2018Q)
2F	HVH	00~07	00	00	00	00	HV-Comp-H	(CXD2018Q)
30	FCL	00~07	03				Frame Color	(SDA 9188)
31	FON	00~01	01				Frame ON	(SDA 9188)
32	DLY	00~07	50 Hz		60 Hz		Select Delay LL 3 P	(SDA 9188)
33	P-V	00~0F	00		00		V read delay	(SDA 9188)
34	PVS	00~07	07		07		PIP-V offset	(SDA 9188)
35	P-H	00~3F	04		04		H read delay	(SDA 9188)
36	PHS	00~0F	0A		07		PIP-H offset	(SDA 9188)
			04		03			

Item number	Adjustment Item	Data range	Standard DATA				Note	Device
			50 Hz		60 Hz			
			Normal	Wide	Normal	Wide		
37	CTR	00~0F	0A				Contrast	(SDA 9188)
38	EPL	00~01	01				External PLL	(SDA 9188)
39	FWV	00~01	01				Frame Width V	(SDA 9188)
3A	FWH	00~01	01				Frame Width H	(SDA 9188)
3B	DVI	00~0F	07				Setting Delay VSI	(SDA 9188)
3C	DVP	00~0F	0F				Delay VSP Pulse	(SDA 9188)
3D	BRT	00~0F	0C				Frame BRIGHT Data	(SDA 9188)
3E	LEV	00~0F	00				Level Adjust	(TDA 9840)
3F	STR	00~3F	02				Stereo Adjust	(TDA 9840)
40	AXG	00~01	00				AUX Output Gain	(TDA 8204)
41	AXM	00~01	00				AUX Output Mute	(TDA 8204)
42	VCX	00~01	00				VCXO free run	(TDA 8204)
43	ERC	00~01	00				Error count Time	(TDA 8204)
44	MXE	00~01	00				MAX. allowed Error	(TDA 8204)
45	SRO	00~01	00				SRO set Bit	(TDA 8204)
46	ATO	00~00	01				Auto Selection	(TDA 8204)
47	SYS	00~01	00				System select	(TDA 8204)
48	FSW	00~03	00				Force Switch	(TDA 8204)
49	SYN	00~01	01				Synthesizer	(TDA 8204)
4A	VCR	00~01	00				VCC Reference Sw	(CXP 1315 P)
4B	SEL	00~FF	5F				Separation Level	(CXP 1315 P)
4C	DCS	00~3F	Normal	Wide			DC Shift	(CXA 1526 P)
4D	UYB	00~3F	1 F	1 F			Upper Y Bow	(CXA 1526 P)
4E	LYB	00~3F	1 F	1 F			Lower Y Bow	(CXA 1526 P)
4F	HAP	00~3F	1 F	1 F			H. Amp	(CXA 1526 P)
50	HTL	00~3F	1 F	1 F			H. Tilt	(CXA 1526 P)
51	UCB	00~3F	1 F	1 F			Upper Corner Bow	(CXA 1526 P)
52	UTL	00~3F	1 F	1 F			Upper Tilt	(CXA 1526 P)
53	LCB	00~3F	1 F	1 F			Lower Corner Bow	(CXA 1526 P)
54	LTL	00~3F	1 F	1 F			Lower Tilt	(CXA 1526 P)
55	TXP	00~0F	00				Teletext Picture	(Teletext $\mu$ -Con)
56	ODL	00~FF	10				Power ON Delay	(CXP 80424)
57	OSH	00~3F	0 F				OSD Position H	(CXP 80424)
58	BLU	00~01	01				Blue Back Feature	(CXP 80424)
59	ROC	00~0F	04				Center of Rotation	(CXP 80424)
5A	ROS	00~07	07				Step Width	(CXP 80424)
5B	HTR	00~3F	1F	1F	1F	1F	H Trapezoid	(CXP 80424)
5C	MUT	00~01	01				No Sync. Mute	(CXP 80424)
5D	DID	00~01	00				Disable Degauss	(CXP 80424)
5E	OP0	00~FF	6D				Option 0	(CXP 80424)
5F	OP1	00~0F	01				Option 1	(CXP 80424)

\*1 : Input data are different according to models.

\*2 : Input data are different according to models.

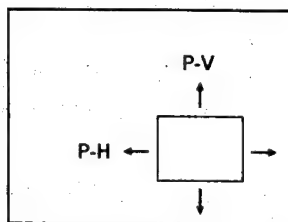
Item	CCD	Text	PinP	Jpn	Nicm	W.G	Mts	Comb
KV-L34SN11	0	1	1	0	1	1	0	1

Item	—	—	—	—	Mono	Tilt	Dcon	Chin
KV-L34SN11	0	0	0	0	0	0	1	1

### 5-3. DISPLAY POSITION ADJUSTMENT

Item Numbers 35-36

- 33 P-V Pin-P vertical position correction
- 34 PVS Pin-P vertical offset
- 35 P-H Pin-P horizontal position correction
- 36 PHS Horizontal offset



When pressing PIP "POSITION" key in the service mode, "POSITION" turns round and round automatically.

Item numbers 33-36 are set to the standard values.

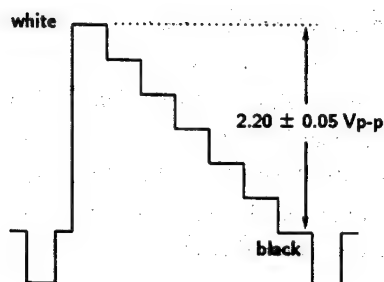
54 TXP Teletext picture

Corrects the brightness for when teletext is received.  
Standard value is 05.

### 5-4. A BOARD ADJUSTMENT

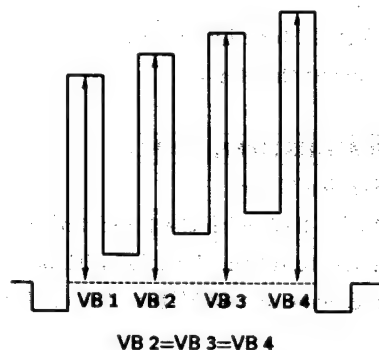
#### SUB CONTRAST ADJUSTMENT (SCN)

1. Receive a PAL color-bar.
2. Put DC 3.0 V to the pin ② (ABL IN) of IC 304, A board. Set the PICTURE 100%, BRIGHT 50% and COLOR MIN.
3. Connect an oscilloscope to the pin ⑥ (R OUT) of CN118, A board.
4. Set to Service Mode and select 01 (SCN) with [1] and [4] of the commander to adjust to  $2.2 \pm 0.05$  V.
5. Press [MUTING] → [0] of the commander to write the data.
6. Receive a NTSC color-bar and adjust 01 (SCN) same value as PAL.
7. Receive the PAL color-bar to set to WIDE mode by pressing [MENU]. Then set to Service Mode and adjust 01 (SCN) to write the 2 step dropped value of the step 4.
8. Receive the NTSC color-bar and adjust as step 7.



#### SUB COLOR ADJUSTMENT (SCL)

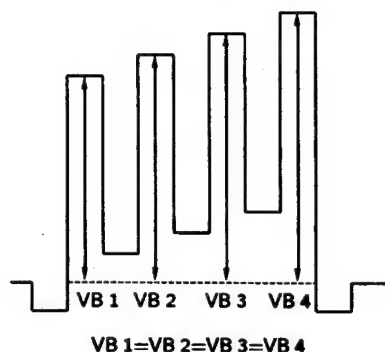
1. Receive a PAL color-bar.
2. Connect an oscilloscope to the pin ⑦ (B OUT) of CN118, A board.
3. Set to Service Mode and select 03 (SCL) with [1] and [4] of the commander to adjust to  $VB2=VB3=VB4$  with [3] and [6].
4. Press [MUTING] → [0] of the commander to write the data.
5. Adjust as step 4 and 5 by receiving NTSC color-bar.



6. Receive the PAL color-bar to set to WIDE mode by pressing [MENU]. Then set to Service Mode and adjust 03 (SCL) to write the 1 step dropped value of the step 4.
7. Receive the NTSC color-bar and adjust as step 7.

### **SUB HUE ADJUSTMENT (SHU)**

1. Receive a NTSC color-bar.
2. Connect an oscilloscope to the pin ⑦ (B OUT) of CN 118, A board.
3. Select 04 (SHU) with **1** and **4** of the commander by setting to Service Mode and adjust to VB 1=VB 2=VB 3=VB 4 with **3** and **6**.



4. Press **MUTING** → **0** of the commander to write the data.
5. Set to WIDE Mode by **MENU** button to write the same value as the step 3.

### **Y. FILTER ADJUSTMENT (YF1)**

1. Set to Service Mode.
2. Select 14 (Y. SW) with the **1** and **4** of the commander to set the data "3" with **3** and **6**.
3. Put SINE wave of 4.43 MHz to the pin ② (YIN) of IC304.
4. Connect an oscilloscope to the pin ① of CN105, A board.
5. Adjust so that the waveform is minimum by selecting 11 (YF1) with **3** and **6**.  
Change back 14 (Y. SW) to data "1".
6. Press **MUTING** → **0** of the commander to write the data.

### **PIP H. V. POSITION (P-H, P-V)**

1. Receive a PAL color-bar.
2. Set the PIP picture by pressing **PIP** button of the commander.
3. Set to Service Mode.
4. Select 33 (P-V) with the **1** and **4** of the commander to set the data "07" with **3** and **6**.
5. Select 35 (P-H) to set the data "0A" .
6. Receive a NTSC color-bar.
7. Select 33 (P-V) to set the data "07" with **3** and **6**.  
Select 36 (PHS) to set the data "03" with **3** and **6**.
8. Check by pressing **POSITION** of the commander.
9. Press **MUTING** → **0** of commander to write the data.



## 5-5. PICTURE DISTORTION ADJUSTMENT

Item Numbers 23-2D

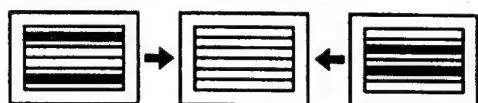
23 VSZ (V SIZE)



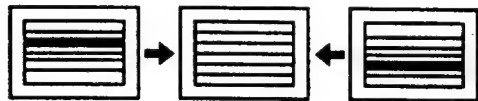
24 VSF (V SHIFT)



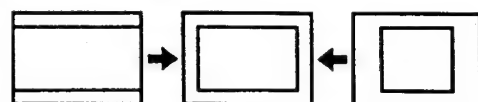
25 SCR (VERTICAL S correction)



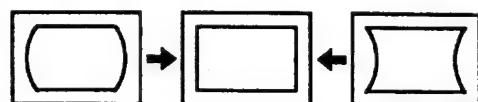
26 VLN (V LINEARITY)



27 HSZ (H SIZE)



28 PAP (PIN AMP)



29 TLT (TILT)



2A UCP (Upper Corner Pin)

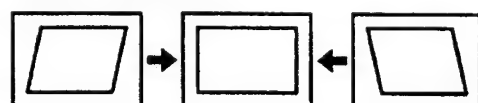
2B LCP (Lower Corner Pin)



2C VBOW (V-BOW)

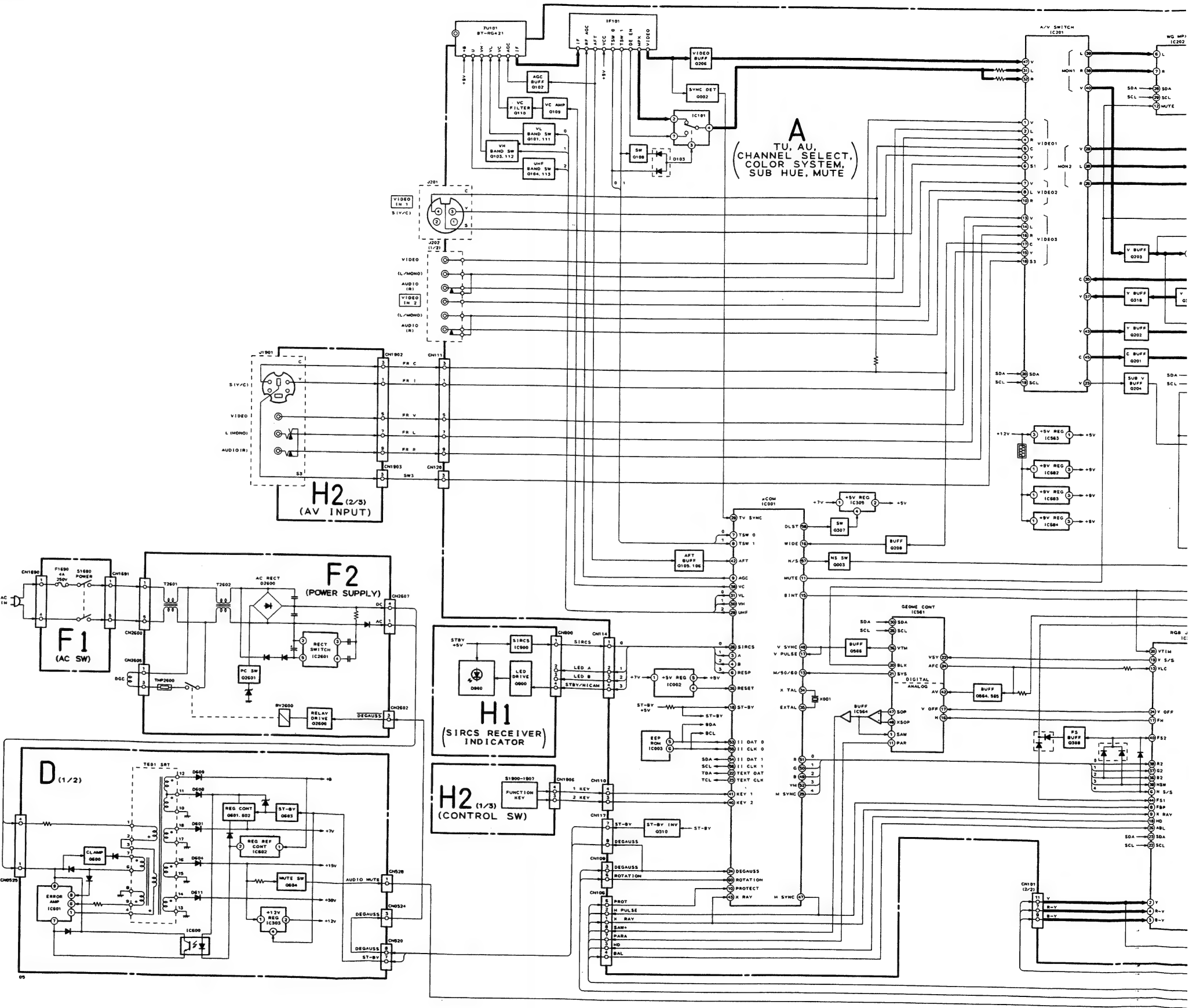


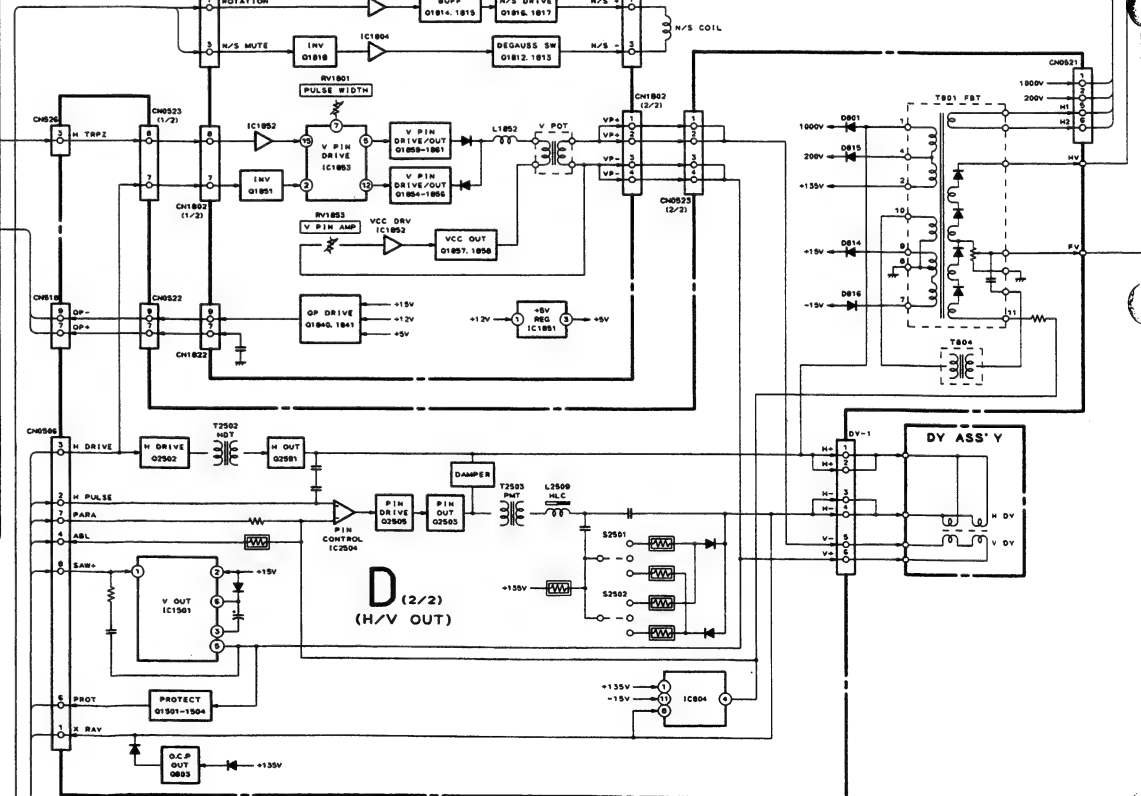
2D VAG (V-ANGLE)



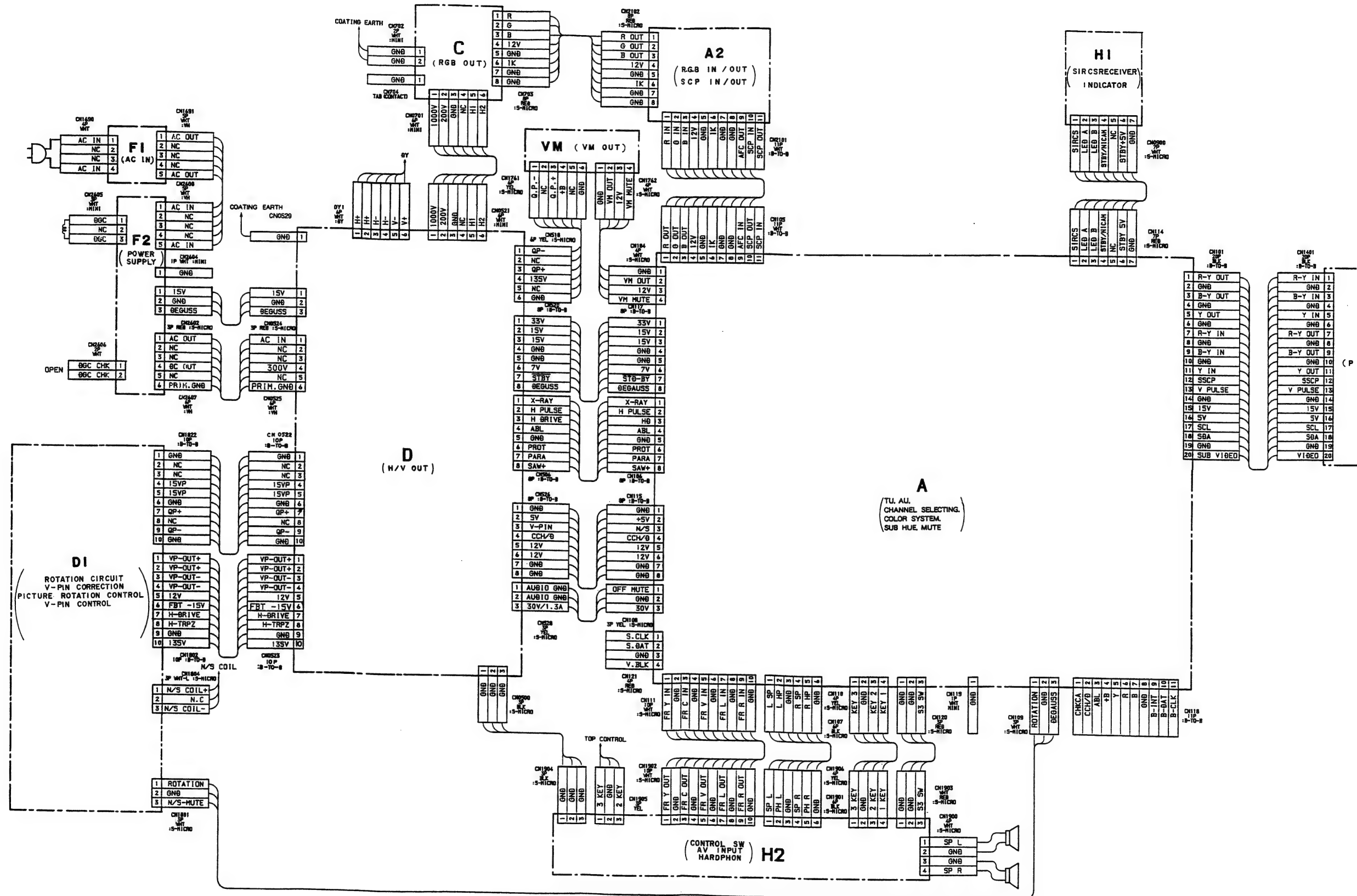
DIAGRAMS

6-1. BLOCK DIAGRAM

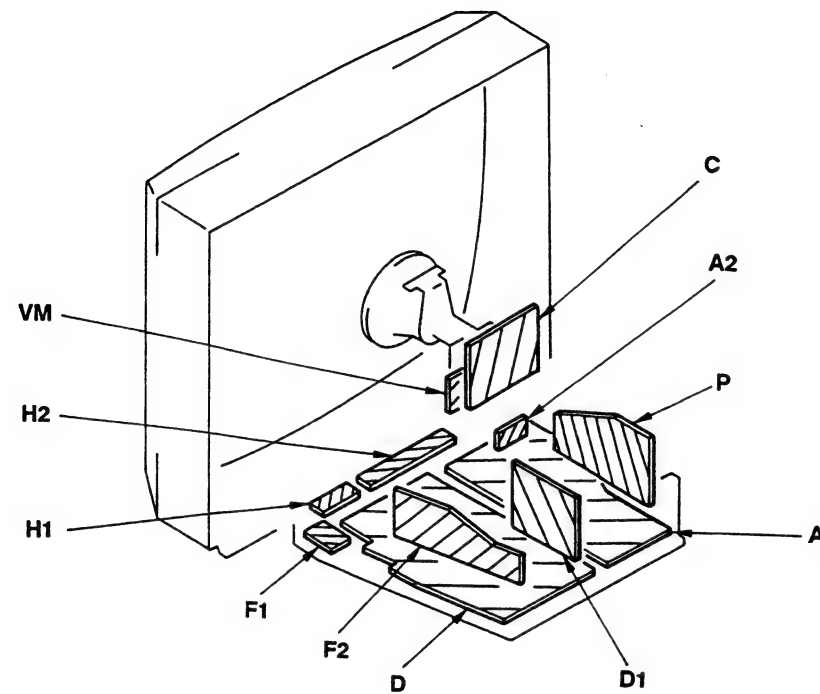




## 6-2. FRAME SCHEMATIC DIAGRAM



## CIRCUIT BOARDS LOCATION



## 6-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

### Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$   
50 W or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.  
 $\text{k}\Omega = 1000 \Omega$ ,  $\text{M}\Omega = 1000\text{K}\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm  
Rating electrical power  $\frac{1}{4}$  W (CHIP: 1/10W)

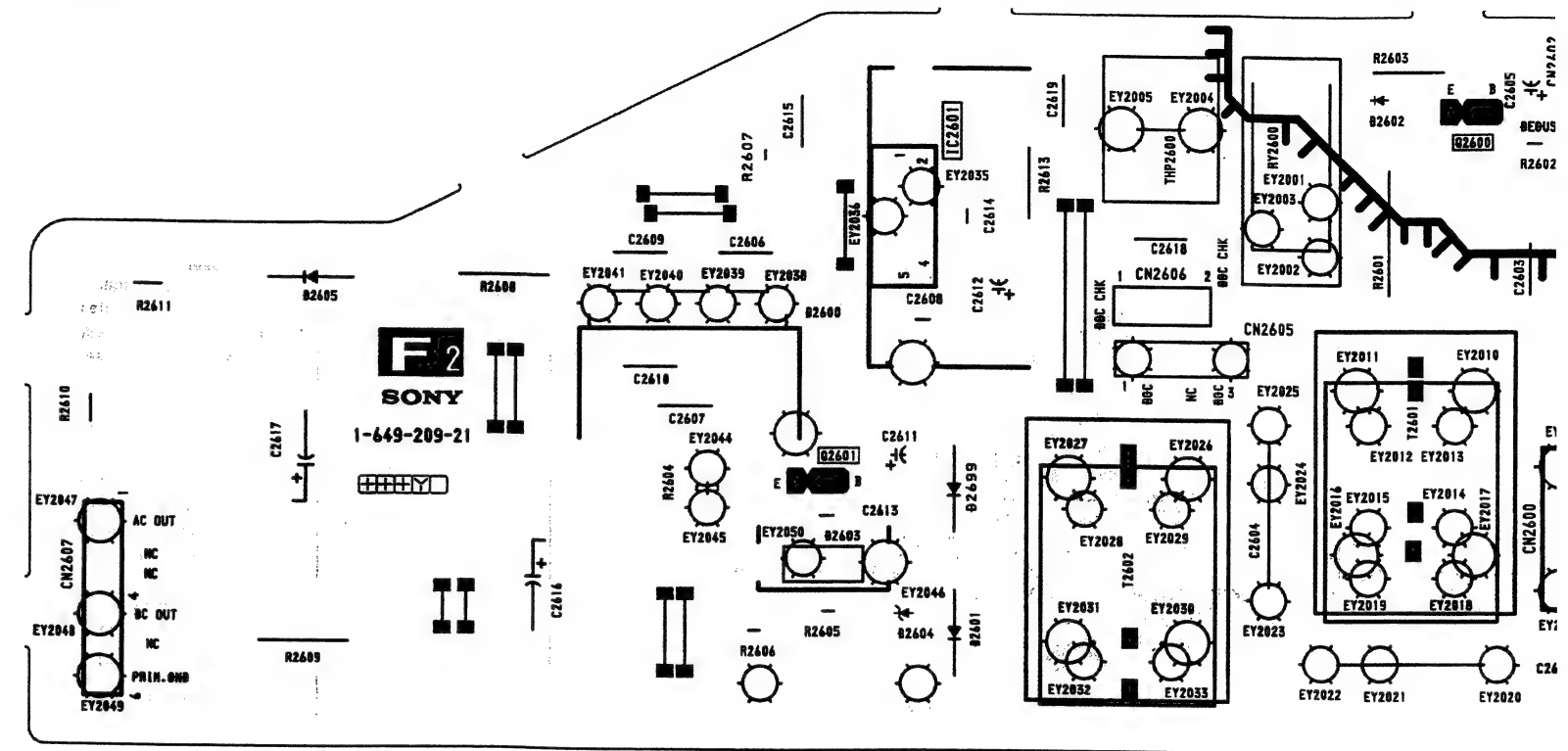
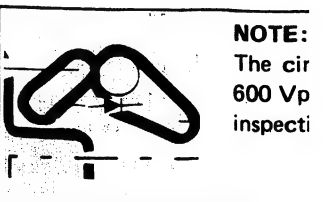
- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a color-bar signal input.  
no mark : PAL  
< > : SECAM  
( ) : NTSC 3.58  
( ) : NTSC 4.43
- Readings are taken with a 10  $\text{M}\Omega$  digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- \* : Can not be measured.
- Circled numbers are waveform reference.
- : B + bus.
- : B - bus.
- : signal path.

**Note:** The components identified by shading and mark are critical for safety. Replace only with part number specified.

### Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
COIL	: *	ADJUSTMENT RESISTOR
	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

**F<sub>1</sub>** [AC IN]      **H<sub>1</sub>** [SIRCS RECEIVER, INDICATOR]      **F<sub>2</sub>** [POWER SUPPLY]      **H<sub>2</sub>** [CONTROL SW, AV INPUT, HEADPHONE]

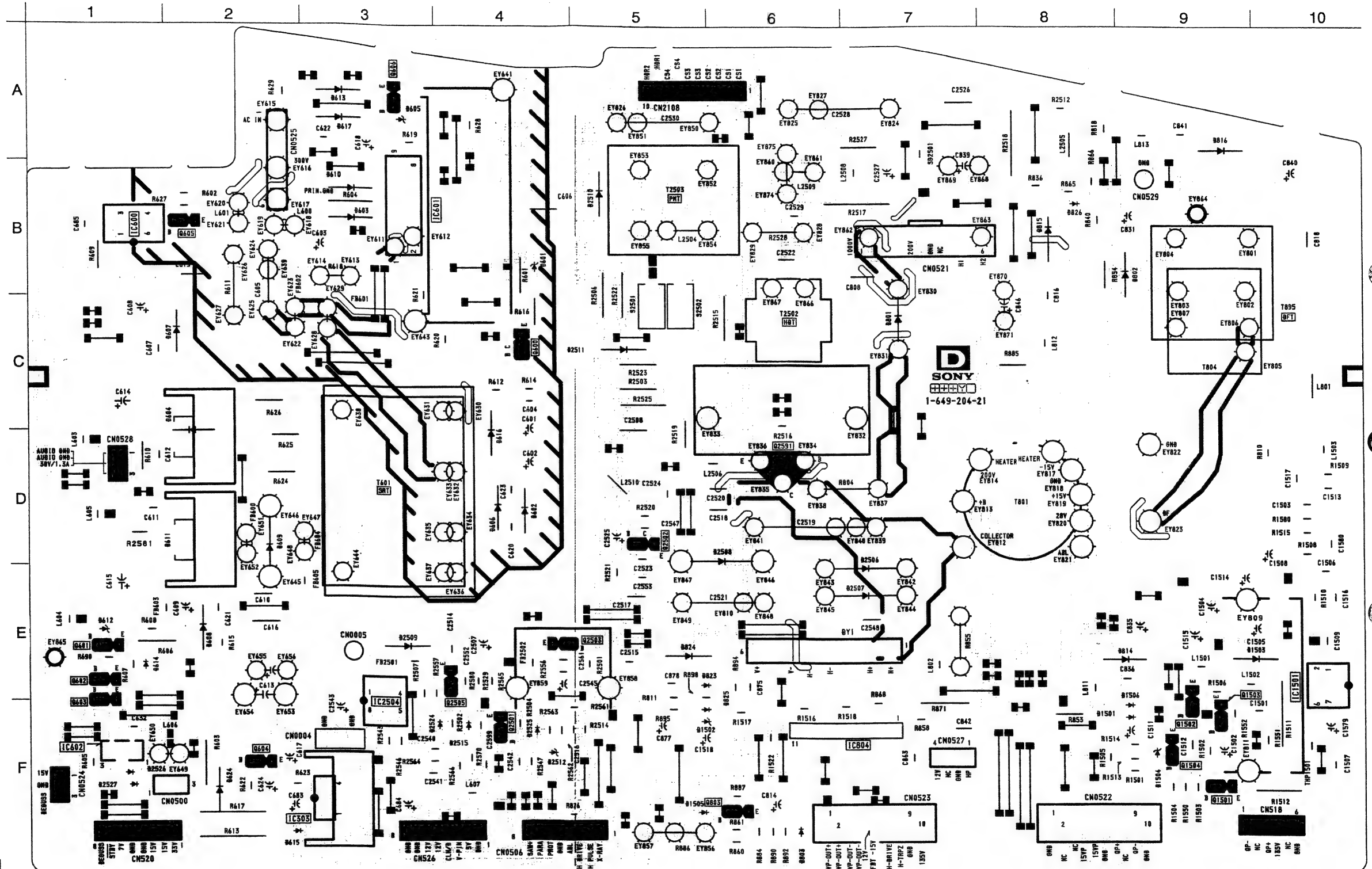
[illegible]

• D BOARD

IC	DIODE
IC303 F-3	D601 B-4
IC600 B-1	D602 D-4
IC601 B-3	D604 C-2
IC602 F-1	D606 D-4
IC804 F-7	D607 C-2
IC1501 E-10	D608 E-2
IC2504 E-3	D609 D-2
	D610 B-3
	D611 D-2
	D612 E-1
	D613 A-3
	D614 E-1
	D615 F-2
	D616 D-4
	D617 A-3
	D624 F-2
	D801 C-7
	D802 B-9
	D803 F-6
	D814 E-9
	D815 B-8
	D816 A-9
	D824 E-5
	D825 E-5
	D1501 E-9
	D1502 F-5
	D1503 E-10
	D1504 F-9
	D1505 F-5
	D1506 E-9
	D2506 D-7
	D2507 E-7
	D2508 D-6
	D2509 E-3
	D2510 B-5
	D2511 C-5
	D2512 F-4
	D2515 F-4
	D2524 F-3
	D2526 F-1
	D2527 F-1

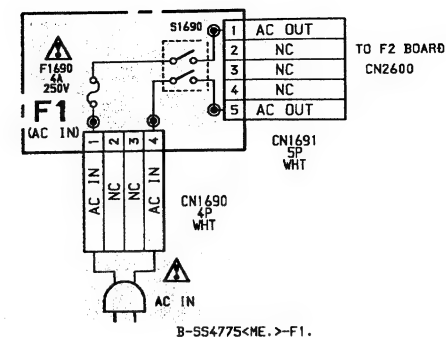
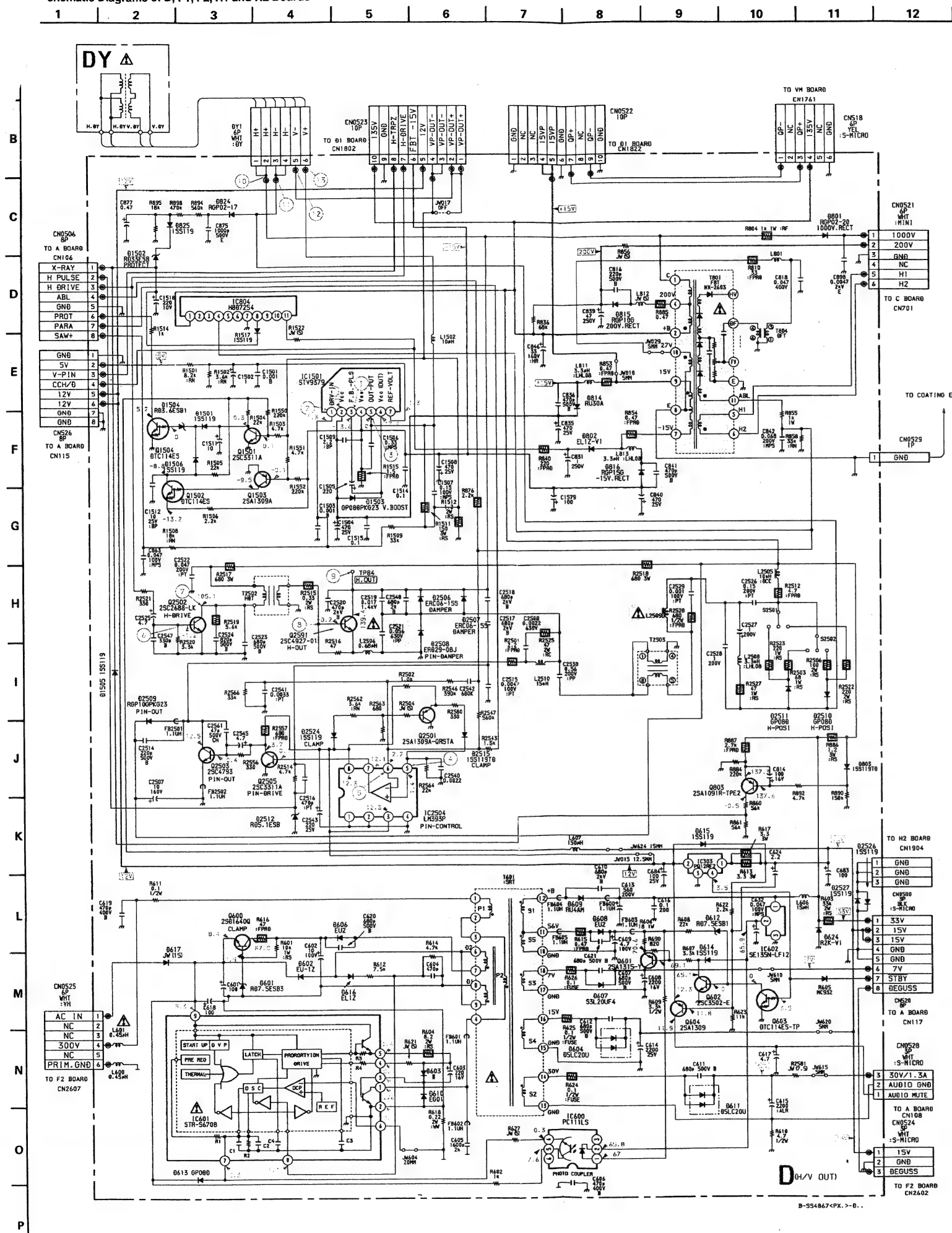
TRANSISTOR

Q600 C-4
Q601 E-1
Q602 E-1
Q603 E-1
Q604 F-3
Q803 F-6
Q1501 F-9
Q1502 E-9
Q1503 E-9
Q1504 F-9
Q2501 F-4
Q2502 D-5
Q2503 E-4
Q2505 E-4
Q2591 D-6

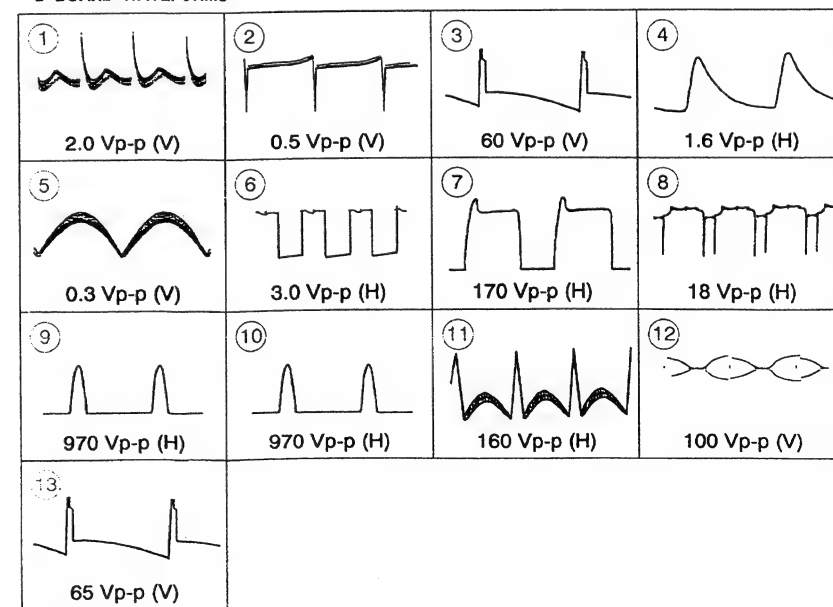


ed as left contains high voltage of over  
ist be paid to prevent an electric shock in  
ring.

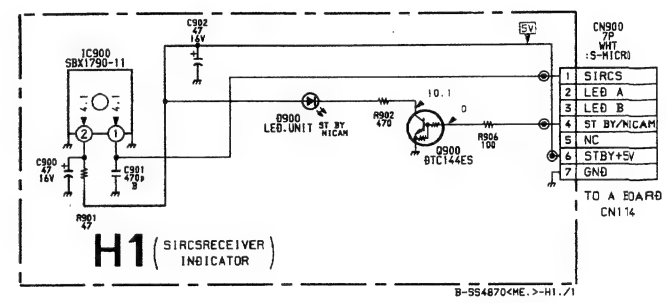
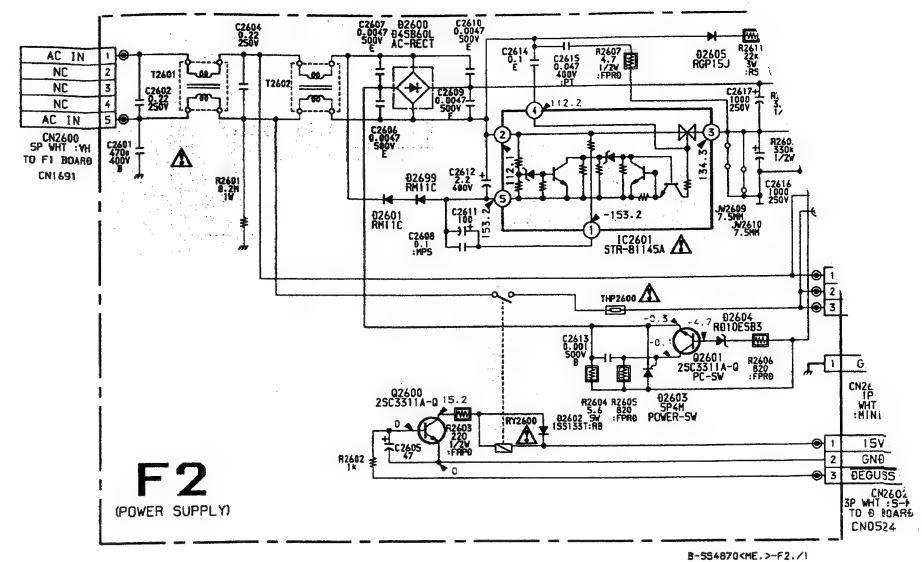
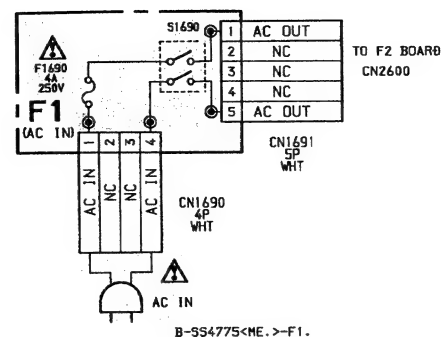
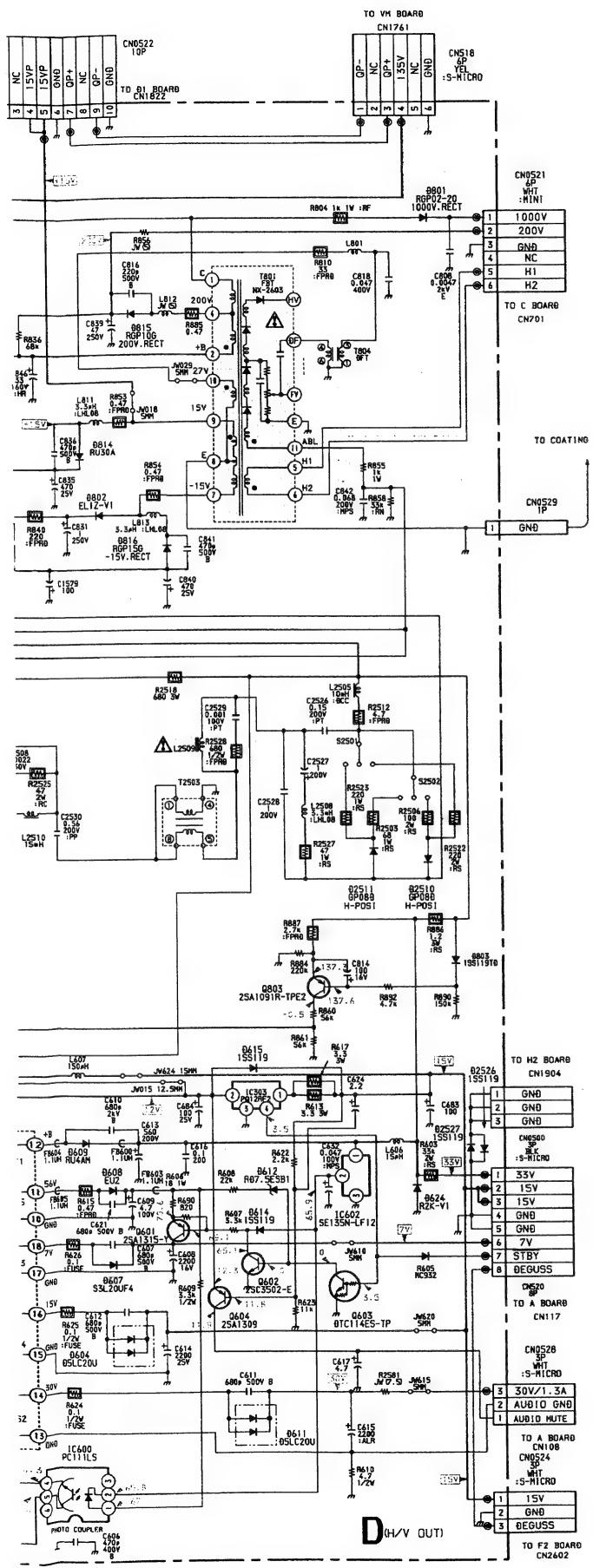




• D BOARD WAVEFORMS







• D BOARD WAVEFORMS

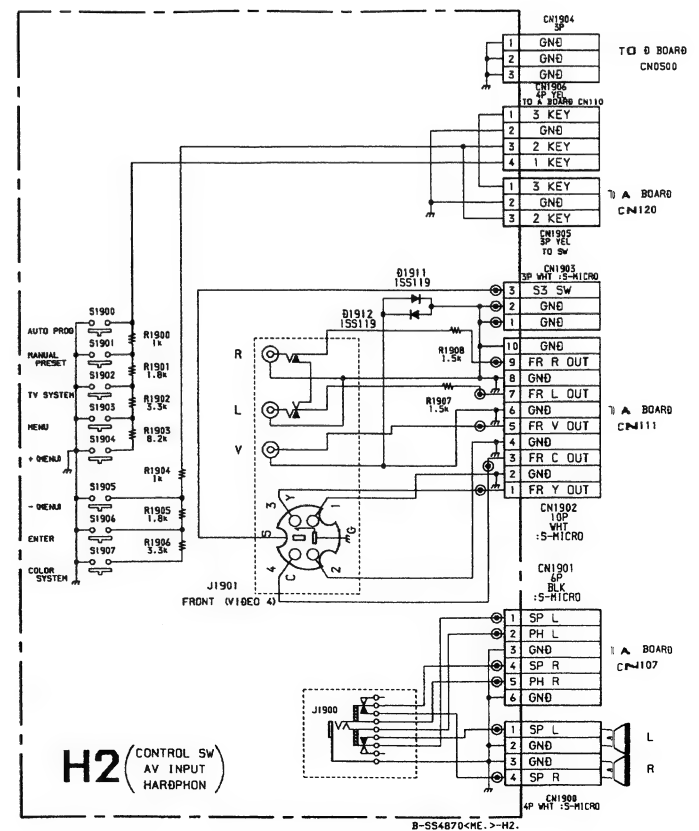
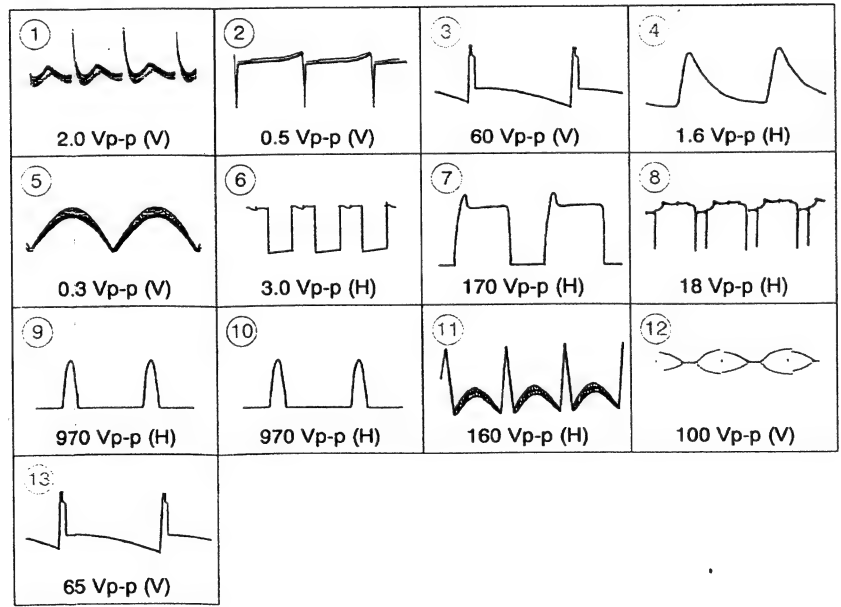
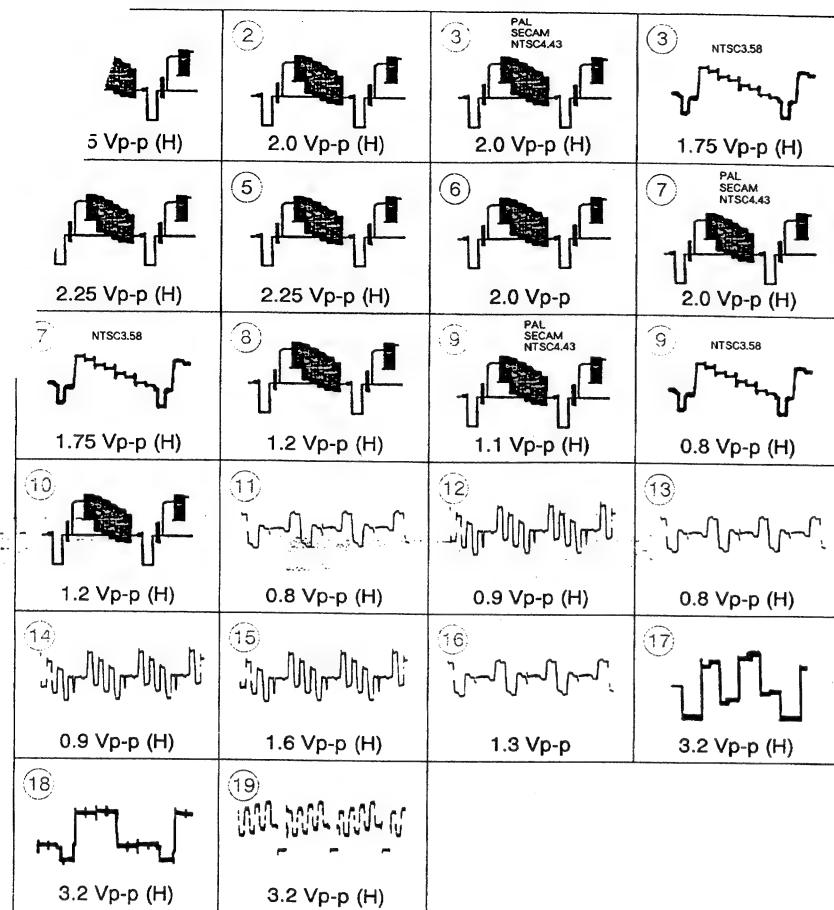
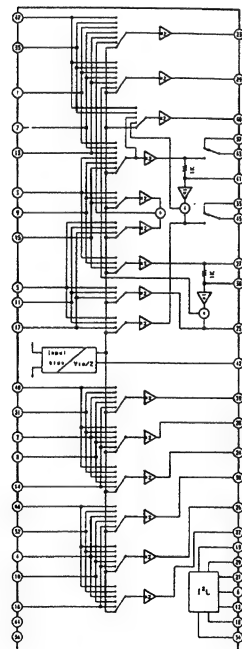


Diagram of A Board

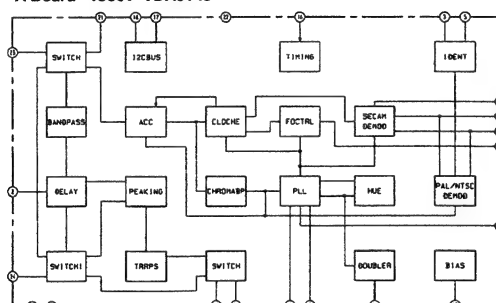
AVEFORMS



A Board IC201 CXA1545AS



A Board IC301 TDA9145



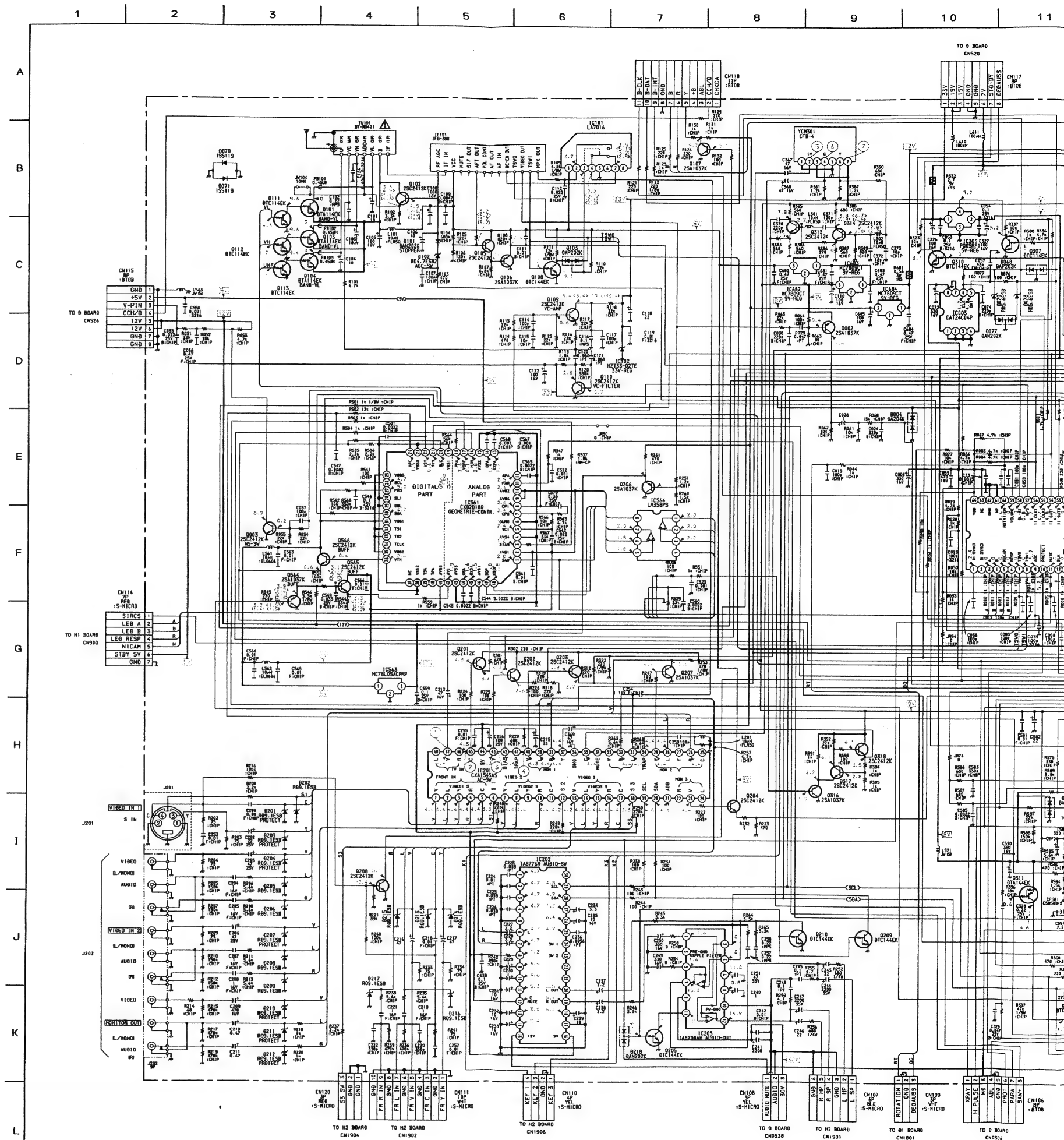
Schematic diagrams

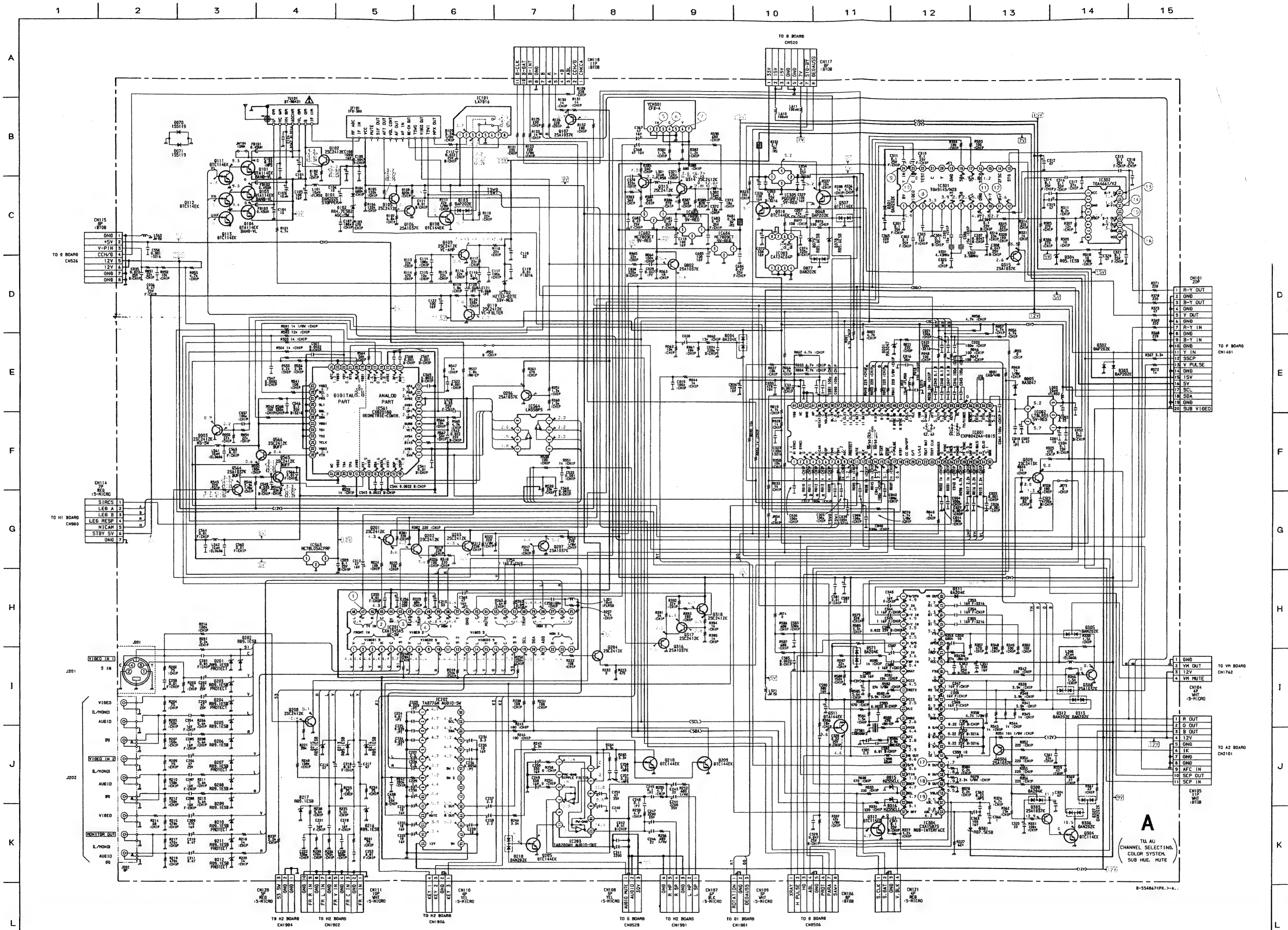
D F1 F2

H1 H2 boards

Schematic diagram

A board

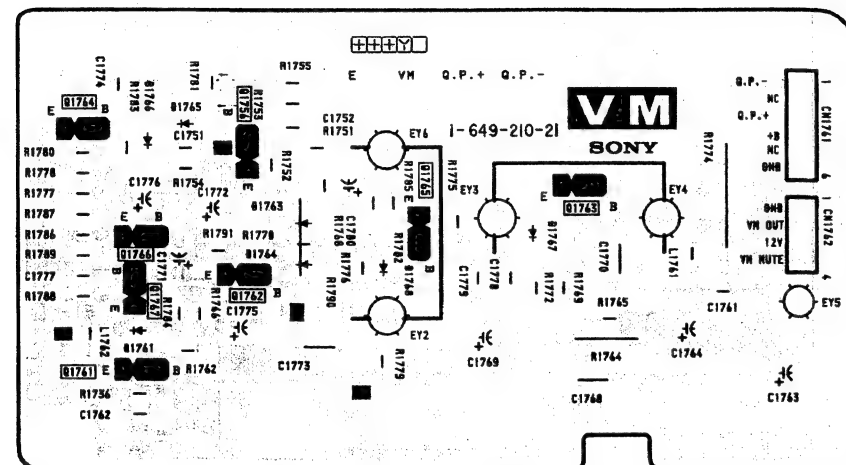








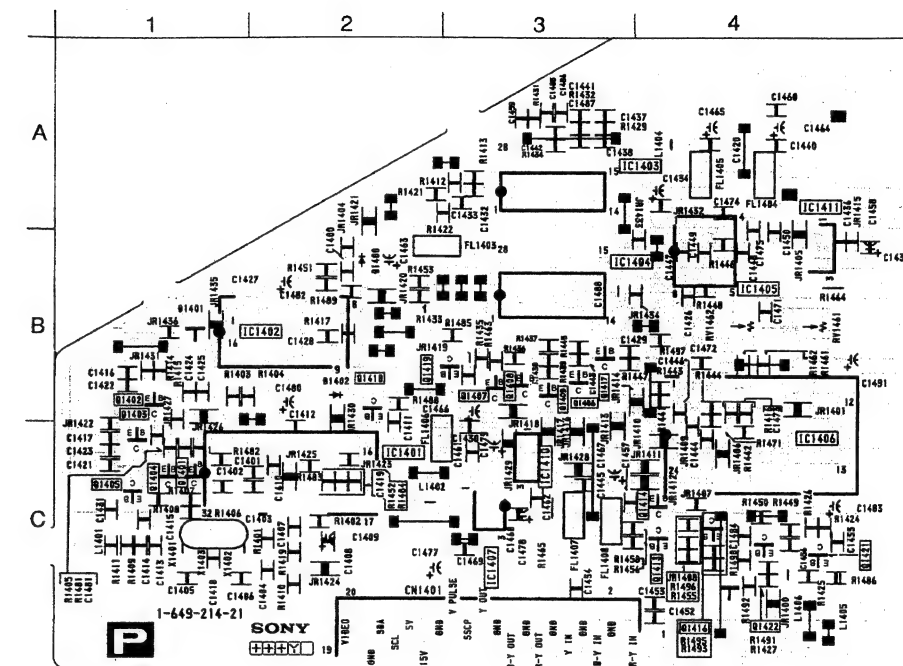
**PRINTED WIRING BOARDS**  
**— VM Board —**



**A<sub>2</sub>** [ R, G, B IN/OUT,  
SCP IN/OUT ]

**P** [P IN P]

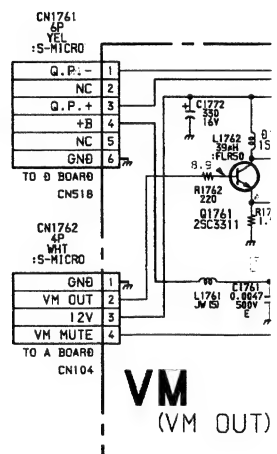
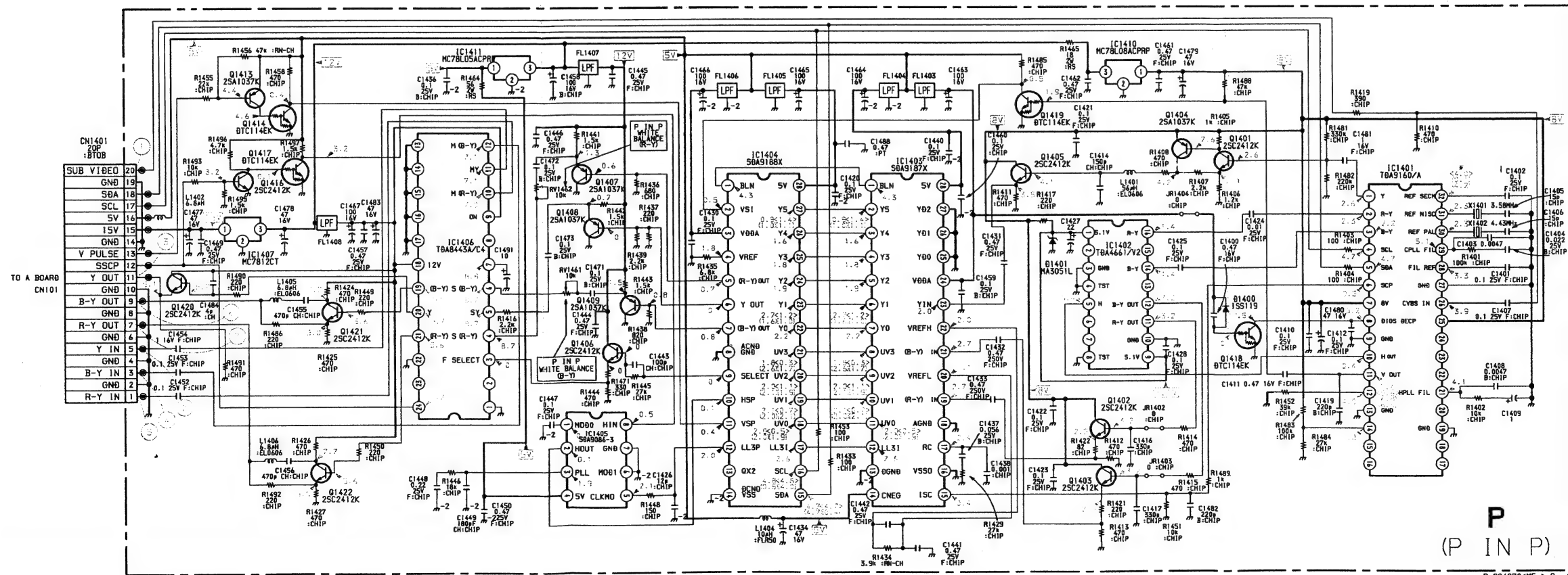
**- P Board -**

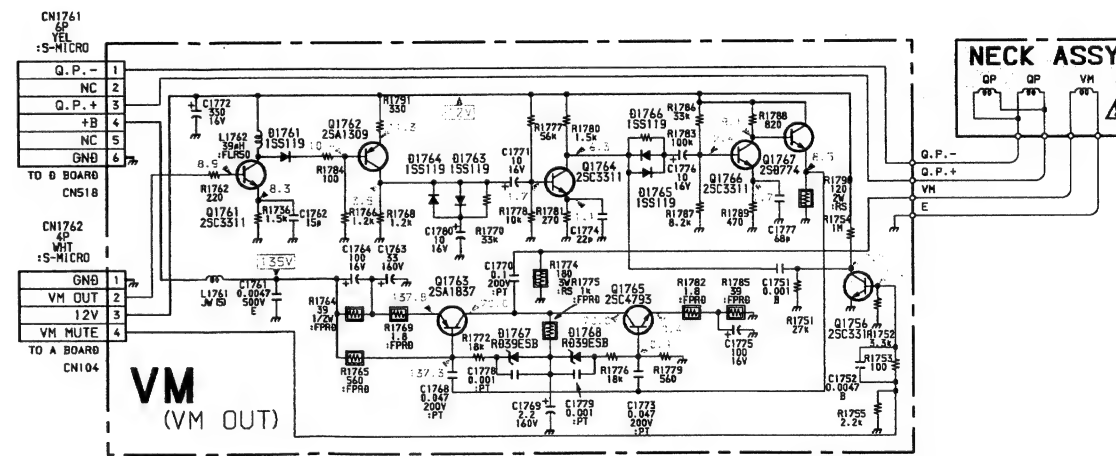
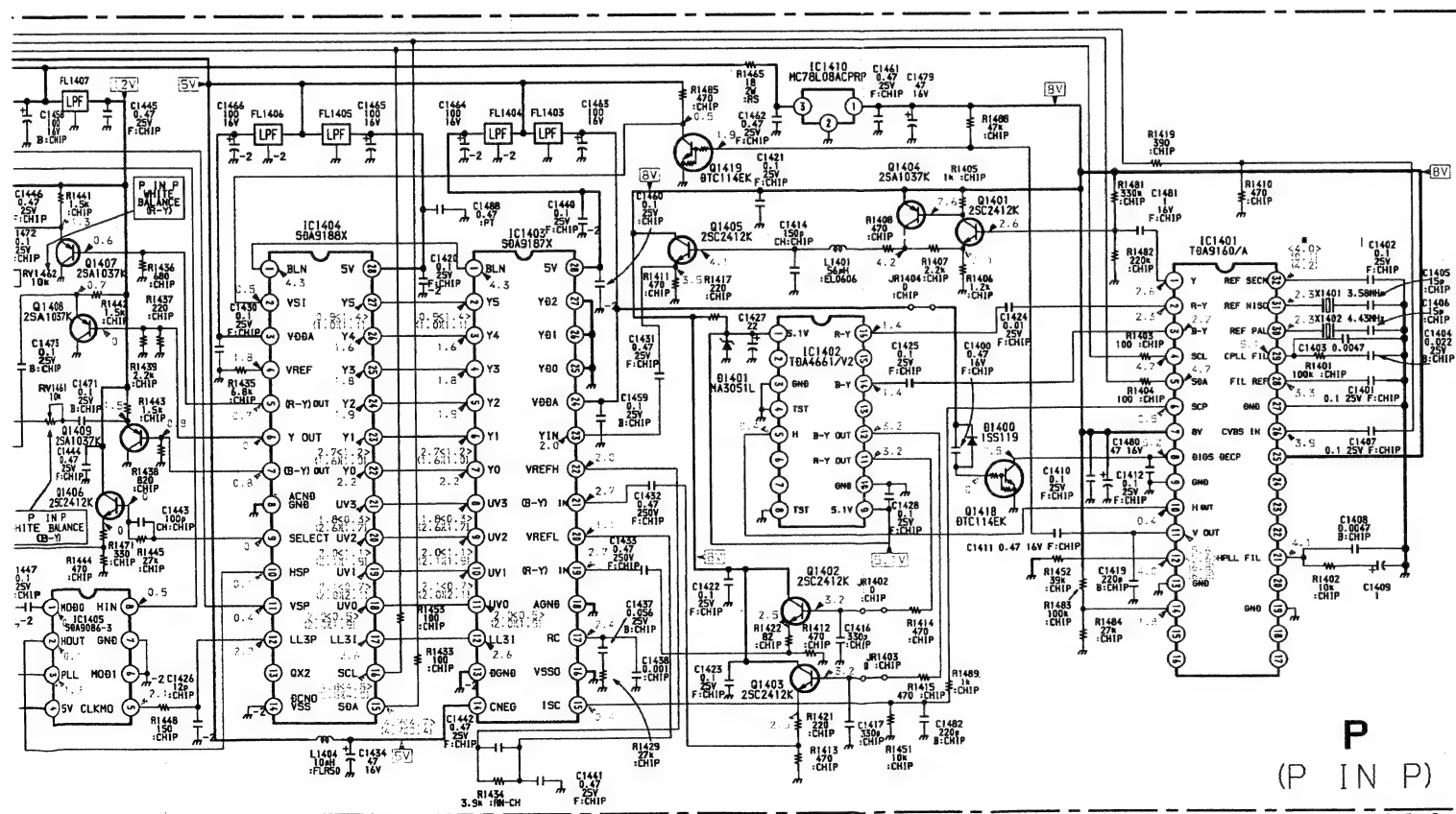
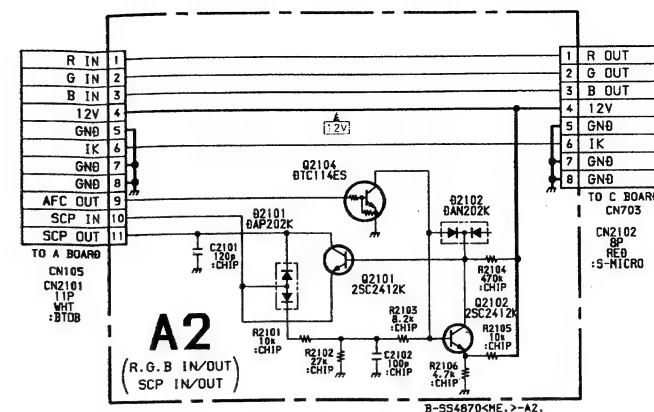
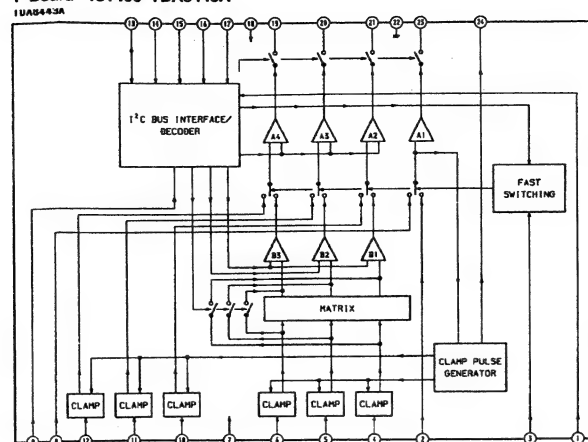
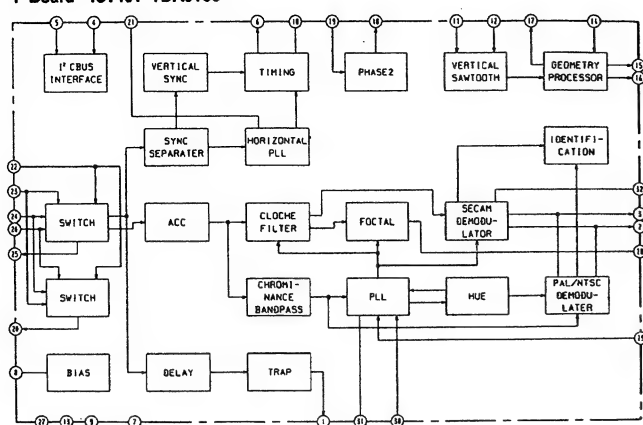


- P BOARD

IC	Q1403 C - 1	DIODE
	Q1404 C - 1	
IC1401 C - 2	Q1405 C - 1	D1400 B - 2
IC1402 B - 2	Q1406 B - 3	D1401 B - 1
IC1403 A - 3	Q1407 B - 3	CRYSTAL
IC1404 B - 3	Q1408 B - 3	
IC1405 B - 4	Q1409 B - 3	
IC1406 C - 4	Q1413 C - 4	
IC1407 C - 3	Q1414 C - 4	
IC1410 C - 3	Q1416 C - 4	X1401 C - 1
IC1411 B - 4	Q1417 B - 3	X1402 C - 1
TRANSISTOR	Q1418 B - 2	
	Q1419 B - 3	
	Q1420	
Q1401 C - 1	Q1421 C - 4	
Q1402 B - 1	Q1422 C - 4	

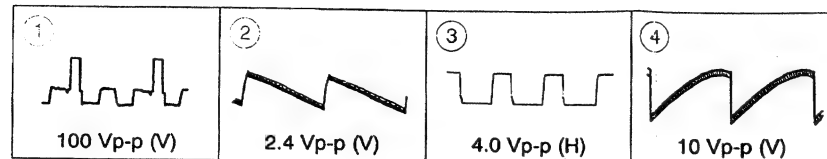
<p>1</p> <p>2.0 Vp-p (H)</p>	<p>2</p> <p>PAL SECAM NYSC3.58</p> <p>0.4 Vp-p (H)</p>	<p>2</p> <p>NTSC4.43</p> <p>0.4 Vp-p (H)</p>	<p>3</p> <p>PAL SECAM NYSC3.58</p> <p>0.4 Vp-p (H)</p>
<p>3</p> <p>NTSC4.43</p> <p>0.4 Vp-p (H)</p>	<p>4</p> <p>1.5 Vp-p (H)</p>	<p>5</p> <p>1.3 Vp-p (H)</p>	<p>6</p> <p>1.5 Vp-p (H)</p>
<p>7</p> <p>1.3 Vp-p (H)</p>			

[illegible]

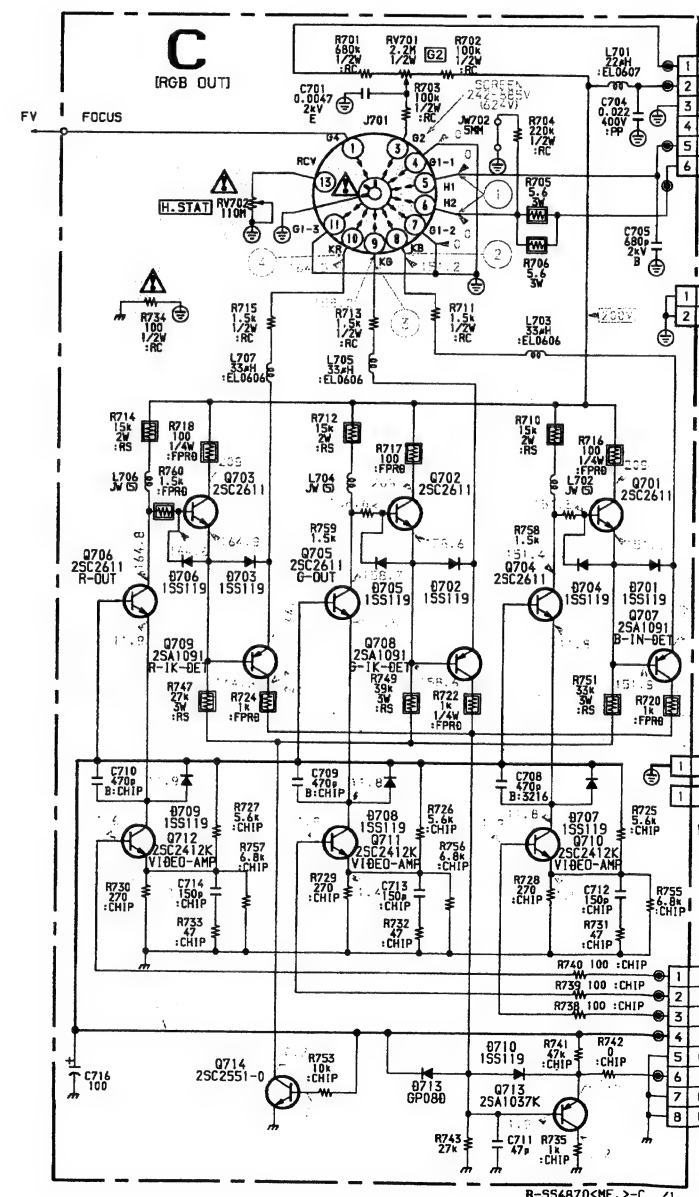
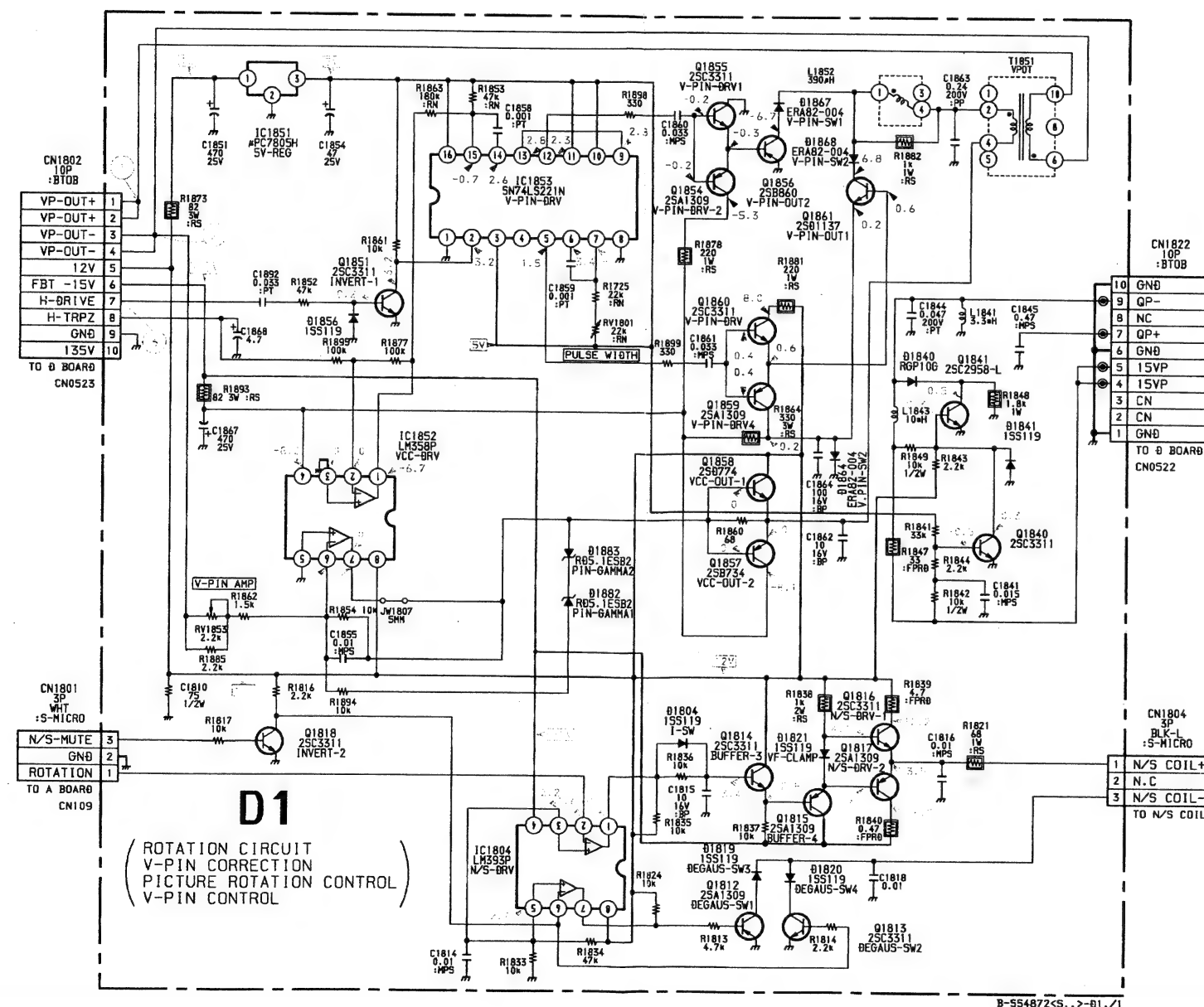
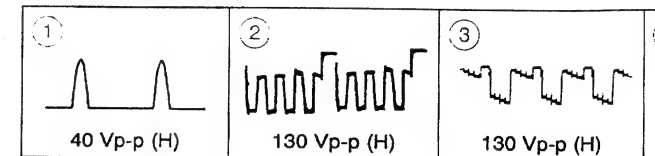




• D1 BOARD WAVEFORMS



• C BOARD WAVEFORMS



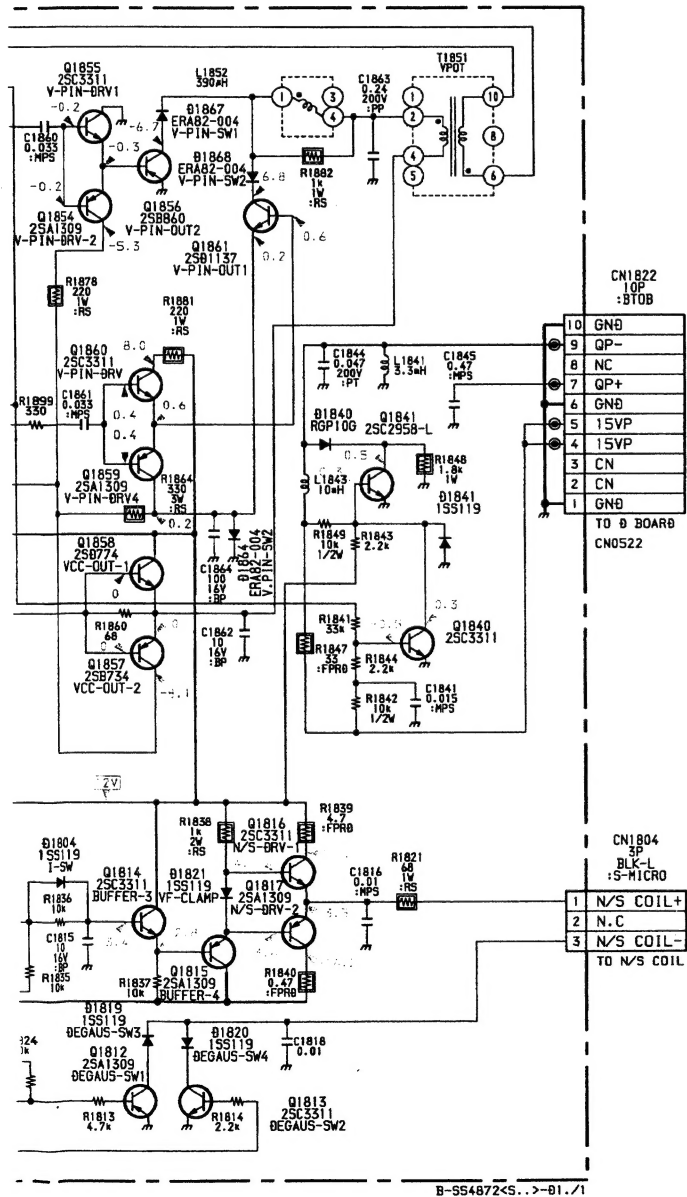
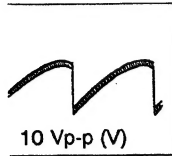
Schematic diagrams

A2 P VM boards

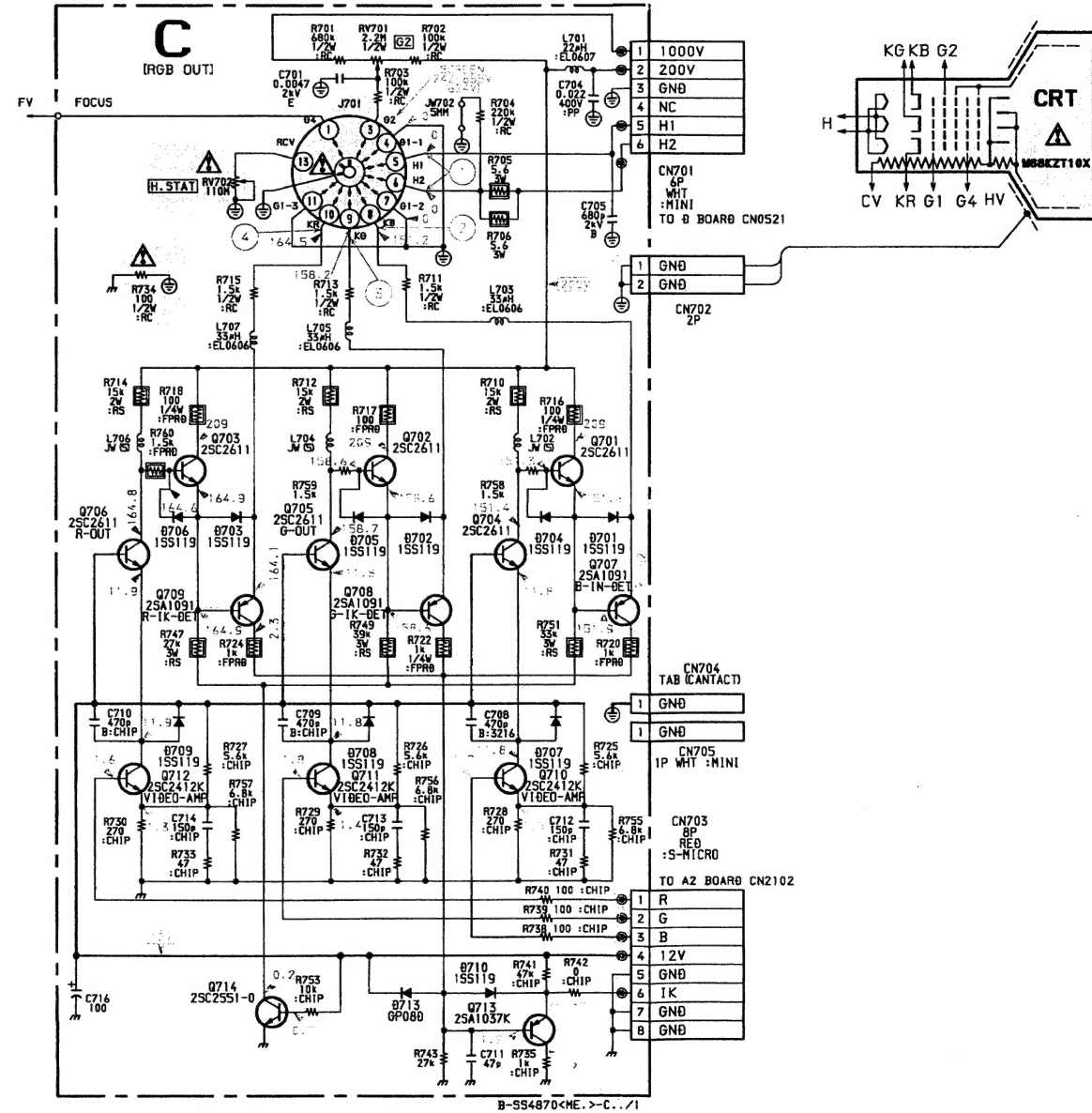
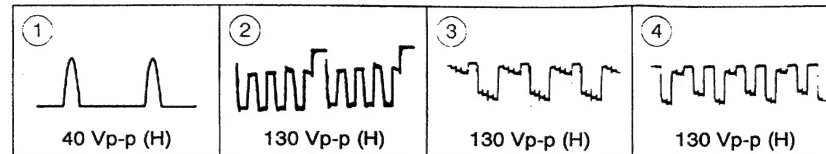
Schematic diagrams

C D1 boards

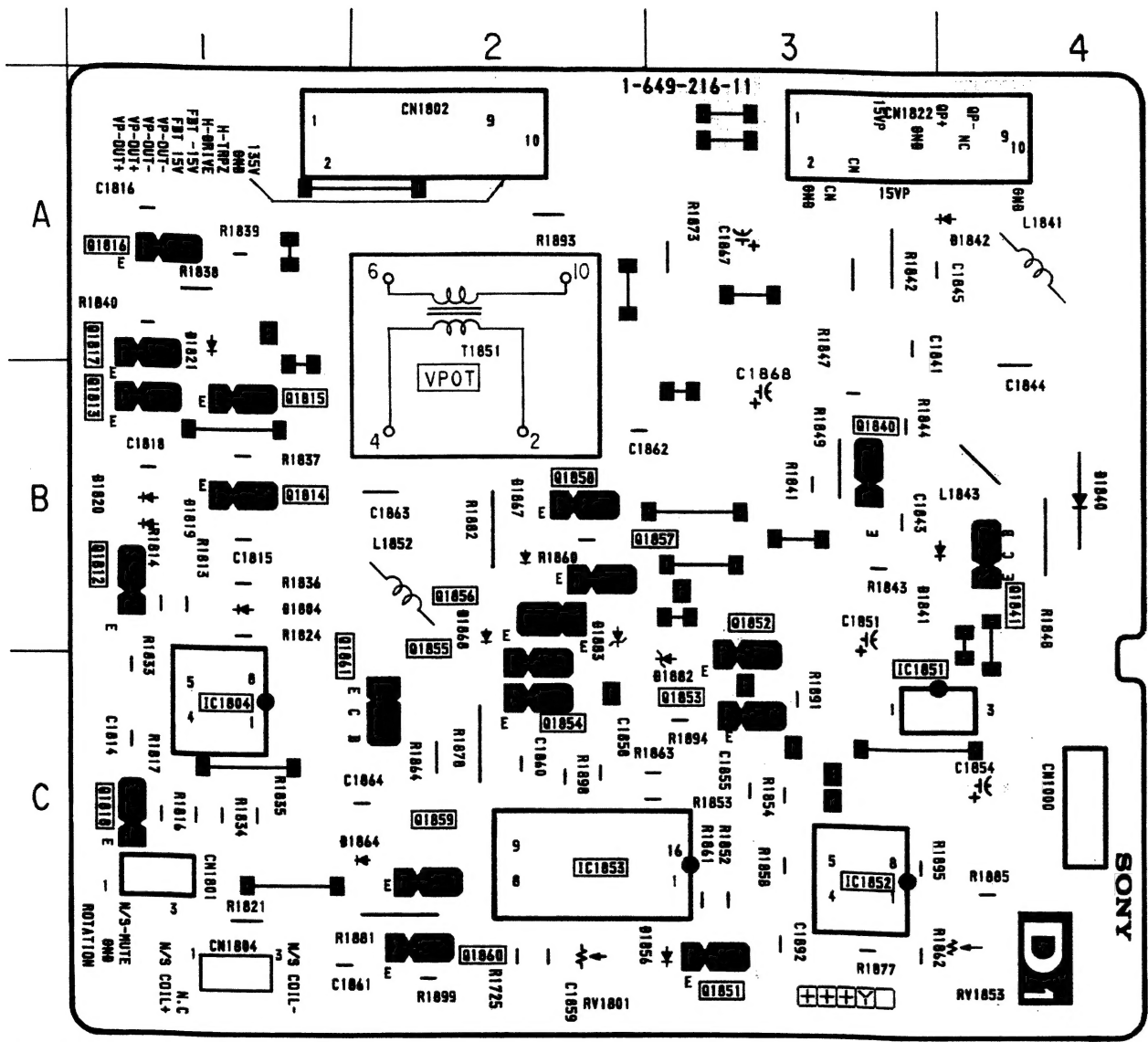




• C BOARD WAVEFORMS



PRINTED WIRING BOARDS  
- D1 Board -

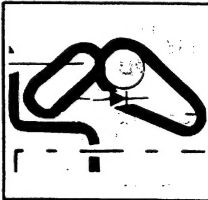
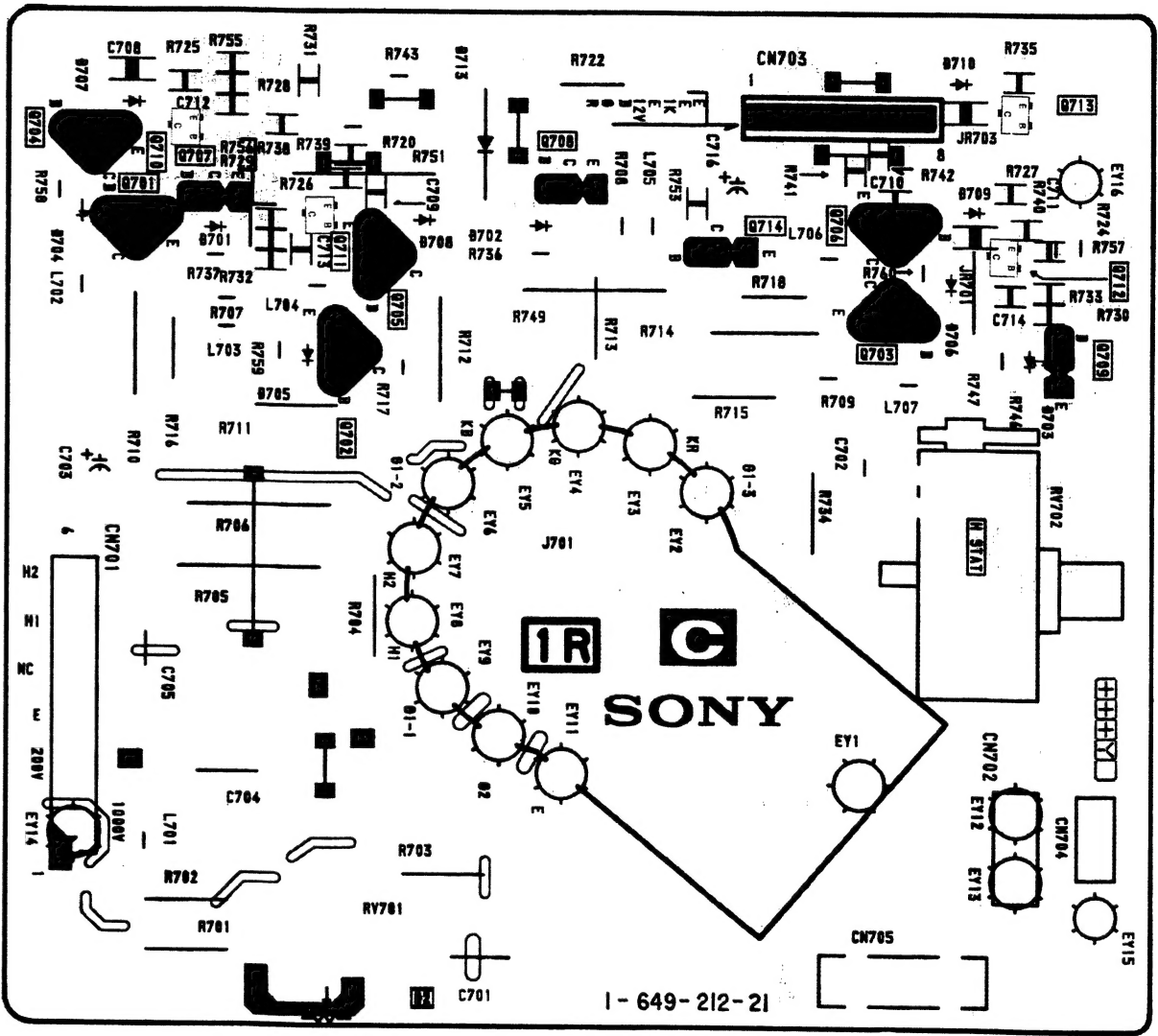


• D1 BOARD

IC	Q1851 C-3	D1856 C-3
IC1804 C-1	Q1854 C-2	D1864 C-2
IC1851 C-3	Q1855 C-2	D1867 B-2
IC1852 C-3	Q1856 B-2	D1868 B-2
IC1853 C-2	Q1857 B-2	D1882 C-3
	Q1858 B-2	D1883 B-2
	Q1859 C-2	
TRANSISTOR	Q1860 C-2	VARIABLE RESISTOR
	Q1861 C-2	RV1801 C-2
		RV1853 C-4
	DIODE	
Q1812 B-1	D1804 B-1	
Q1813 B-1	D1819 B-1	
Q1814 B-1	D1820 B-1	
Q1815 B-1	D1821 A-1	
Q1816 A-1	D1840 B-4	
Q1817 A-1	D1841 B-3	
Q1818 C-1		
Q1840 B-3		
Q1841 B-4		

C [R, G, B OUT]

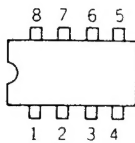
- C Board -



**NOTE:**  
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

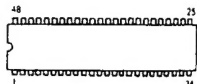
## 5-5. SEMICONDUCTORS

CAT24C04P  
LM358P  
LM393P  
SDA9086-3  
 $\mu$ PC358C  
 $\mu$ PC393C



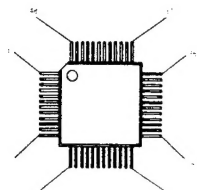
(Top view)

CXA1545AS  
CXA1587S



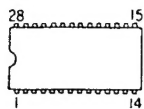
(TOP VIEW)

CXD2018Q



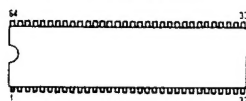
(TOP VIEW)

CXK5864BSP-10L  
MAB8461P-W220  
SAA5231/V7  
SDA9187X  
SDA9188X



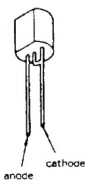
(Top view)

CXP80424  
CXP80424-SV4652



(Top view)

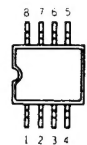
HZT33-02TE  
 $\mu$ PC574J



LA7016



LM358PS



(TOP VIEW)

L78LR05D-MA



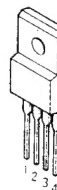
MC78L05ACPRP  
NJM78L05A



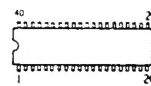
MC7809CT  
MC7812CT  
NJM78M09FA  
TA7805S  
 $\mu$ PC7805H



PQ05RF1



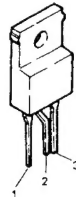
SAA5243P/T



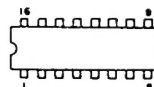
(Top view)

SE135N-LF12

1. V<sub>OUT</sub>
2. V<sub>IN</sub>
3. GND



SN74LS221N  
TDA4661/V2  
TDA9821

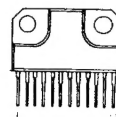


(TOP VIEW)

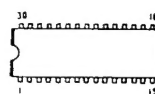
STR-81145A



TA8200AH

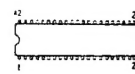


TA8776N



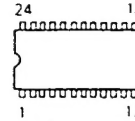
(Top view)

TDA8204  
TDA8205



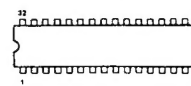
(Top view)

TDA8443A/C4  
TDA9145  
TDA9145/N2B



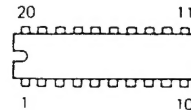
(Top view)

TDA9160A



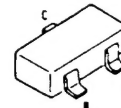
(TOP VIEW)

TDA9840



(Top view)

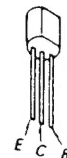
DTA114EK  
DTA144EK  
DTC114EK  
DTC144EK  
2SA1037K  
2SA1162-G  
2SC1623-L5L6  
2SC2412K  
2SC2412K-QR  
2SC2413K  
2SC2413KQ



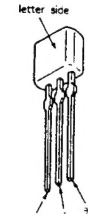
DTC114ES  
DTC144ES



2SA1091-O  
2SC2551-O



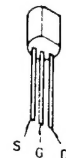
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2SA1309A  
2SC2785-HFE  
2SC3311A



2SA1315-Y



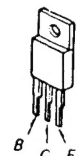
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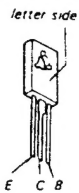
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2SC2958-L  
2SD774-34



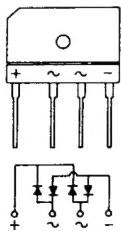
2SB858-C  
2SB860  
2SD2012  
2SD2061-EF



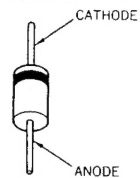
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2SC3502-E  
2SC3601-E



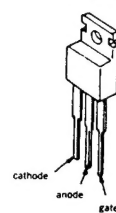
D4SB60L



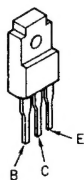
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RGP02-17  
RGP02-17EL-6433  
RU4AM  
RU4DS



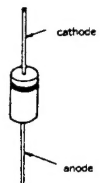
5P4M  
5P6M



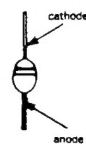
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2SC4793  
2SD1137



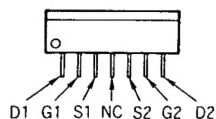
EGP20G  
EG01  
EL-1Z  
EU-1Z  
EU-2  
GP08D  
RGP15G  
RGP15J



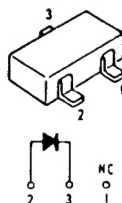
GP08  
U05G



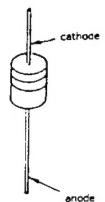
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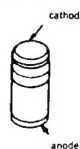
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RD13M-B2  
RD3.6M-B2  
RD4.7M-B2  
RD5.6M-B3  
RD6.8M-B1



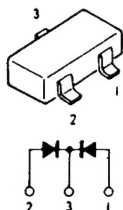
ERA82-004  
ERA85-009  
HZS5CLL-TD  
RD10ES-B3  
RD3.6ES-B1  
RD33ES-B2  
RD39ES-B  
RD39ES-B2  
RD5.1ES-B  
RD5.1ES-B1  
RD5.1ES-B2  
RD5.6ES-B  
RD7.5ES-B  
RD7.5ES-B1  
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RD7.5ES-B3  
RD9.1ES-B  
RD9.1ESL  
1SS119  
1SS133



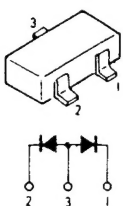
MA3051L-TX



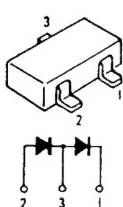
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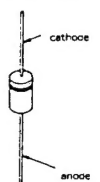
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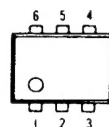
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